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 NEWS  3  DEC 21  IPC search and display fields enhanced in CA/CAplus with the
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 NEWS  4  DEC 23  New IPC8 SEARCH, DISPLAY, and SELECT fields in USPATFULL/
                  USPAT2
 NEWS  5  JAN 13  IPC 8 searching in IFIPAT, IFIUDB, and IFICDB
 NEWS  6  JAN 13  New IPC 8 SEARCH, DISPLAY, and SELECT enhancements added to
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 NEWS  7  JAN 17  Pre-1988 INPI data added to MARPAT
 NEWS  8  JAN 17  IPC 8 in the WPI family of databases including WPIFV
 NEWS  9  JAN 30  Saved answer limit increased
 NEWS 10  JAN 31  Monthly current-awareness alert (SDI) frequency
                  added to TULSA
 NEWS 11  FEB 21  STN AnaVist, Version 1.1, lets you share your STN AnaVist
                  visualization results
 NEWS 12  FEB 22  Status of current WO (PCT) information on STN
 NEWS 13  FEB 22  The IPC thesaurus added to additional patent databases on STN
 NEWS 14  FEB 22  Updates in EPFULL; IPC 8 enhancements added
 NEWS 15  FEB 27  New STN AnaVist pricing effective March 1, 2006
 NEWS 16  FEB 28  MEDLINE/LMEDLINE reload improves functionality
 NEWS 17  FEB 28  TOXCENTER reloaded with enhancements
 NEWS 18  FEB 28  REGISTRY/ZREGISTRY enhanced with more experimental spectral
                  property data
 NEWS 19  MAR 01  INSPEC reloaded and enhanced
 NEWS 20  MAR 03  Updates in PATDPA; addition of IPC 8 data without attributes
 NEWS 21  MAR 08  X.25 communication option no longer available after June 2006

 NEWS EXPRESS  FEBRUARY 15 CURRENT VERSION FOR WINDOWS IS V8.01a,
               CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
               AND CURRENT DISCOVER FILE IS DATED 19 DECEMBER 2005.
               V8.0 AND V8.01 USERS CAN OBTAIN THE UPGRADE TO V8.01a AT
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=> s ((near(3a)field) or mask or masking or rens or superresolution or (super(3a)resolution))
L1       182532 ((NEAR(3A) FIELD) OR MASK OR MASKING OR RENS OR SUPERRESOLUTION
                OR (SUPER(3A) RESOLUTION))

=> s ((gold or au or ag or silver or platinum or pt or cu or copper) and (partic? or colloid?)) an
L2         1842 ((GOLD OR AU OR AG OR SILVER OR PLATINUM OR PT OR CU OR COPPER)
                AND (PARTIC? OR COLLOID?)) AND L1

=> s l2 and ((optical or laser or information or compact)(3a)(disk or disc or med?))
L3           61 L2 AND ((OPTICAL OR LASER OR INFORMATION OR COMPACT)(3A)(DISK
                OR DISC OR MED?))

=> d all 1-61

L3   ANSWER 1 OF 61  CAPLUS  COPYRIGHT 2006 ACS on STN
AN   2005:1341699  CAPLUS
ED   Entered STN:  27 Dec 2005
TI     ***Super***  -  ***resolution***   and frequency-dependent efficiency of
       ***near***  -  ***field***     ***optical***     ***disks***   with
       ***silver***   nanoparticles
AU   Ng, Ming-Yaw; Liu, Wei-Chih
CS   Department of Physics, National Taiwan Normal University, Taipei, 11677,
     Taiwan
SO   Optics Express (2005), 13(23), 9422-9430
     CODEN: OPEXFF; ISSN: 1094-4087
     URL: http://www.opticsexpress.org/view_file.cfm?doc=%24%2A%3C3%28K%20%20%2
     0%0A&id=%25%28%2CK%2EJ%3C%3C%20%0A
PB   Optical Society of America
DT   Journal; (online computer file)
LA   English
CC   74 (Radiation Chemistry, Photochemistry, and Photographic and Other
     Reprographic Processes)
AB   The   ***super***  -  ***resoln***  . capability of the AgOx-type
       ***super***  -  ***resoln***  .   ***near***  -  ***field***   structure
     disk with   ***silver***   nanoparticles was studied using
     finite-difference time-domain method at different incident light
     frequencies.  The   ***near***     ***fields***   exhibited strongly local
     field enhancement around   ***silver***   nanoparticles in the AgOx layer
     due to localized surface plasmon.  The subwavelength recording marks
     smaller than .lambda./10 were distinguishable since the metallic
     nanoparticles with high localized fields transferred evanescent waves to
     detectable signals in the far field.  The far-field signals from random
       ***silver***   nanoparticles displayed similar behaviors as those from
     single nanoparticle and red-shifts of peak frequencies from
       ***particle***  -  ***particle***   interaction.
RE.CNT  35    THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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L3 ANSWER 2 OF 61 CAPLUS
AN 2005:508888 CAPLUS
DN 143:202832
ED Entered STN: 15 Jun 2005
TI Enhanced scattering of random-distribution nanoparticles and evanescent ***field*** in ***super*** - ***resolution*** ***near*** - ***field*** structure
AU Li, J. M.; Shi, L. P.; Lim, K. G.; Miao, X. S.; Yang, H. X.; Chong, T. C.
CS Data Storage Institute, Singapore, 117608, Singapore
SO Japanese Journal of Applied Physics, Part 1: Regular Papers, Brief Communications & Review Papers (2005), 44(5B), 3620-3622
CODEN: JAPNDE
PB Japan Society of Applied Physics
DT Journal
LA English
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
AB This study focuses on evanescent fields induced by ***silver*** nanoparticles in the ***mask*** layer and in the interfaces in an AgOx-type ***super*** - ***resoln*** . ***near*** - ***field*** structure (***super*** - ***RENS***). The finite-difference time-domain (FDTD) method is used to analyze the scattering fields from the localized surface plasmons of ***silver*** nanoparticles. It has been found that the spatial extension of the evanescent field is very short along the thickness direction of the layers, and the 3-dimensional coupling patterns of the evanescent fields from the individual ***particles*** are irregular. The study also found that the intensity of the evanescent fields is dependent on the ***silver*** concn.
ST scattering random distribution nanoparticle ***super*** ***resoln*** ***near*** ***field*** structure; ***silver*** nanoparticle induced evanescent field super ***RENS*** optical recording
IT Simulation and Modeling
(finite-difference; study of evanescent fields induced by ***Ag*** nanoparticles in ***mask*** layer and in interfaces in AgOx-type ***super*** - ***resoln*** . ***near*** - ***field*** structure)
IT Evanescent wave
Nanoparticles
Optical recording materials
Surface plasmon
(study of evanescent fields induced by ***Ag*** nanoparticles in ***mask*** layer and in interfaces in AgOx-type ***super*** - ***resoln*** . ***near*** - ***field*** structure)
IT ***Optical*** ***disks***
(super- ***RENS*** ; study of evanescent fields induced by ***Ag*** nanoparticles in ***mask*** layer and in interfaces in AgOx-type ***super*** - ***resoln*** . ***near*** - ***field*** structure in relation to)
IT 7440-22-4, ***Silver*** , processes
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(nanoparticles; study of evanescent fields induced by ***Ag***

nanoparticles in ***mask*** layer and in interfaces in AgOx-type ***super*** - ***resoln*** . ***near*** - ***field*** structure)
IT 1314-98-3, Zinc sulfide, processes 7631-86-9, Silica, processes 20667-12-3D, ***Silver*** oxide, nonstoichiometric 87715-69-3
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(study of evanescent fields induced by ***Ag*** nanoparticles in ***mask*** layer and in interfaces in AgOx-type ***super*** - ***resoln*** . ***near*** - ***field*** structure)
RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

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(2) Fuji, H; Jpn J Appl Phys 2000, V39, P980 CAPLUS
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L3 ANSWER 3 OF 61 CAPLUS
AN 2005:508866 CAPLUS
DN 143:202830
ED Entered STN: 15 Jun 2005
TI Signal characteristics of ***super*** - ***resolution*** ***near*** - ***field*** structure disks with 100 GB capacity
AU Kim, Jooho; Hwang, Inoh; Kim, Hyunki; Park, Insik; Tominaga, Junji
CS Digital Media R&D Center, SAMSUNG ELECTRONICS CO., LTD., Suwon, 442-742, S. Korea
SO Japanese Journal of Applied Physics, Part 1: Regular Papers, Brief Communications & Review Papers (2005), 44(5B), 3609-3611
CODEN: JAPNDE
PB Japan Society of Applied Physics
DT Journal
LA English
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
AB The authors report the basic characteristics of ***super*** ***resoln*** . ***near*** - ***field*** structure (***Super*** - ***RENS***) ***media*** at a blue ***laser*** optical system (laser wavelength 405 nm, numerical aperture 0.85). Using a novel write once read many (WORM) structure for a blue laser system, the authors obtained a carrier-to-noise ratio (CNR) above 33 dB from the signal of the 37.5 nm mark length. which is equiv. to a 100 GB capacity with a 0.32 .mu.m track pitch, and an eye pattern for 50 GB (2T: 75 nm) capacity using a patterned signal. Using a novel ***super*** - ***resoln*** . tellurium material with low ***super*** - ***resoln*** . readout power, the authors also improved the read stability.
ST signal characteristics ***super*** ***resoln*** ***near*** ***field*** ***optical*** WORM ***disk***
IT ***Optical*** ROM ***disks***
(WORM, super- ***RENS*** ; characteristics of ***super*** - ***resoln*** .. ***near*** - ***field*** structure ***optical*** ***disks*** at blue ***laser*** ***optical*** system)
IT Crystallization
Particle size distribution
(characteristics of ***super*** - ***resoln*** . ***near*** - ***field*** structure ***optical*** ***disks*** at blue ***laser*** ***optical*** system)
IT ***Optical*** ***disks***
(write-once read-many, super- ***RENS*** ; characteristics of ***super*** - ***resoln*** . ***near*** - ***field*** structure ***optical*** ***disks*** at blue ***laser*** ***optical*** system)
IT 12125-60-9, Praseodymium telluride (PrTe)
RL: DEV (Device component use); USES (Uses)
(characteristics of ***super*** - ***resoln*** . ***near*** - ***field*** structure ***optical*** ***disks*** at blue

laser ***optical*** system)
IT 1314-98-3, Zinc sulfide, properties 7631-86-9, Silica, properties
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(characteristics of ***super*** - ***resoln*** . ***near*** - ***field*** structure ***optical*** ***disks*** at blue ***laser*** ***optical*** system)
IT 7440-06-4, ***Platinum*** , uses
RL: DEV (Device component use); FMU (Formation, unclassified); FORM (Formation, nonpreparative); USES (Uses)
(nanoparticles; characteristics of ***super*** - ***resoln*** . ***near*** - ***field*** structure ***optical*** ***disks*** at blue ***laser*** ***optical*** system)
IT 127860-51-9, Antimony germanium telluride
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(phase-change layer; characteristics of ***super*** - ***resoln*** . ***near*** - ***field*** structure ***optical*** ***disks*** at blue ***laser*** ***optical*** system)
IT 12039-88-2, Tungsten disilicide
RL: DEV (Device component use); USES (Uses)
(recording material; characteristics of ***super*** - ***resoln*** . ***near*** - ***field*** structure ***optical*** ***disks*** at blue ***laser*** ***optical*** system)
IT 11129-89-8, ***Platinum*** oxide
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(recording material; characteristics of ***super*** - ***resoln*** . ***near*** - ***field*** structure ***optical*** ***disks*** at blue ***laser*** ***optical*** system)
RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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L3 ANSWER 4 OF 61 CAPLUS
AN 2005:508518 CAPLUS
DN 143:202815
ED Entered STN: 15 Jun 2005
TI Signal enhancement of ***super*** ***resolution*** enhanced ***near*** - ***field*** structure disk by ***silver*** nanoparticles
AU Kurihara, Kazuma; Arai, Tomofumi; Nakano, Takashi; Tominaga, Junji
CS Center for Applied Near-Field Optics Research (CAN-FOR), National Institute of Advanced Industrial Science and Technology (AIST), 1-1-1 higashi, Tsukuba, 305-8562, Japan
SO Japanese Journal of Applied Physics, Part 1: Regular Papers, Brief Communications & Review Papers (2005), 44(5B), 3353-3355
CODEN: JAPNDE
PB Japan Society of Applied Physics
DT Journal
LA English
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
AB The authors propose a carrier-to-noise ratio (CNR) increment method for a ***super*** ***resoln*** . enhanced ***near*** - ***field*** structure (super- ***RENS***) with ***silver*** nanoparticles. The ***silver*** nanoparticles were fabricated by the RF magnetron sputtering method. The mean diams. of the ***particles*** under as-deposited and 600.degree. C annealed conditions were evaluated as 5 nm and 15 nm, resp. The light absorption peak of the ***silver*** nanoparticles was adjusted to a laser wavelength of 405 nm for an ***optical*** ***disk*** system. The ***silver*** nanoparticles

showed a higher absorption characteristic when they were annealed at above 500.degree. C. In the case of a recording mark size of 50 nm, the CNR enhancement of the super- ***RENS*** with the ***silver*** nanoparticles was evaluated as 11 dB. This method using the ***silver*** nanoparticles provided a higher CNR increment in recording marks below the optical resoln. limit.

ST ***super*** ***resoln*** enhanced ***near*** ***field*** ***optical*** ***disk*** ***silver*** nanoparticle; ***optical*** super ***RENS*** ***disk*** ***silver*** nanoparticle

IT Nanoparticles
Particle size
(carrier-to-noise ratio increment method for ***super*** - ***resoln*** . enhanced ***near*** - ***field*** structure with ***silver*** nanoparticles)

IT ***Optical*** ROM ***disks***
Optical ***disks***
(super- ***RENS*** ; carrier-to-noise ratio increment method for ***super*** - ***resoln*** . enhanced ***near*** - ***field*** structure with ***silver*** nanoparticles)

IT 1314-98-3, Zinc sulfide, properties 7440-06-4, ***Platinum*** , properties 7631-86-9, Silica, properties 689256-53-9, Antimony 61, indium 4.4, ***silver*** 6, tellurium 28.6 (atomic)
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(carrier-to-noise ratio increment method for ***super*** - ***resoln*** . enhanced ***near*** - ***field*** structure with ***silver*** nanoparticles)

IT 7440-22-4, ***Silver*** , properties
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(nanoparticles; carrier-to-noise ratio increment method for ***super*** - ***resoln*** . enhanced ***near*** - ***field*** structure with ***silver*** nanoparticles)

RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD

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L3 ANSWER 5 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:283704 CAPLUS
DN 142:345255
ED Entered STN: 01 Apr 2005
TI High density readable only ***optical*** ***disk***
IN Kim, Hyun-Ki; Kim, Joo-Ho; Yoon, Du-Seop; Hwang, In-Oh
PA Samsung Electronics Co., Ltd., S. Korea
SO PCT Int. Appl., 16 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM G11B007-24
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005029484	A1	20050331	WO 2004-KR2426	20040922

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW

RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

US 2005079313 A1 20050414 US 2004-944421 20040920

PRAI KR 2003-65534 A 20030922

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2005029484	ICM	G11B007-24
	IPCI	G11B0007-24 [ICM,7]
	IPCR	B32B0003-02 [I,A]; B32B0003-02 [I,C]; G11B0007-24 [I,A]; G11B0007-24 [I,C]
US 2005079313	IPCI	B32B0003-02 [ICM,7]
	IPCR	B32B0003-02 [I,A]; B32B0003-02 [I,C]; G11B0007-24 [I,A]; G11B0007-24 [I,C]
	NCL	428/064.400

AB Regarding many media developed recently, the biggest issue is capacity. A high d. readable only ***optical*** ***disk*** includes a substrate having pits with different lengths in accordance with unit information, wherein a depth of the pit increases as the pit length increases; and a ***mask*** layer that includes a metal oxide, or a mixt. of fine metal ***particles*** and a dielec. material. The high d. readable only ***optical*** ***disk*** may be used to read pits not greater than a reading resoln. limit and to obtain an optimal CNR since a pit depth is varied depending on a pit length. Also, a method of the high d. readable only ***optical*** ***disk*** may be used to prep. a high d. readable only ***optical*** ***disk*** having an optimal pit depth in accordance with a pit length.

ST high density readable ***optical*** ***disk*** ROM DVD

IT ***Optical*** ROM ***disks***
(high d. readable only ***optical*** ***disk***)

IT 11129-89-8, ***Platinum*** oxide 94858-24-9
RL: DEV (Device component use); USES (Uses)
(high d. readable only ***optical*** ***disk***)

IT 157392-07-9P, Silicon sulfur zinc oxide 848783-94-8P, ***Platinum*** zinc oxide silicide sulfide (Pt4.2Zn2.5O5Si2.5S2.5)
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(high d. readable only ***optical*** ***disk***)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Lg Electronic Corp; KR 199642544 A 1996
(2) Matsushita Corp; JP 62184630 A 1987
(3) Matsushita Corp; JP 62188026 A 1987
(4) Samsung Electronic Corp; KR 199934079 A 1999
(5) Toshiba Corp; US 6130871 A 2000 CAPLUS

L3 ANSWER 6 OF 61 CAPLUS

AN 2005:175791 CAPLUS

DN 143:429538

ED Entered STN: 03 Mar 2005

TI ***Near*** ***field*** observation of a refractive index grating and a topographical grating by an optically-trapped ***gold*** ***particle***

AU Ukita, Hiroo; Uemi, Hirotaka; Hirata, Atsuhiro

CS Faculty of Science and Engineering, Ritsumeikan University, Kusatsu-shi, Shiga, 525, Japan

SO Optical Review (2004), 11(6), 365-369
CODEN: OPREFN; ISSN: 1340-6000

PB Optical Society of Japan

DT Journal

LA English

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

AB We obsd. the ***near*** ***field*** for a refractive index grating fabricated on a planar light waveguide circuit (PLC) by scanning an optically-trapped 100 nm diam. ***gold*** ***particle*** . We demonstrate that stable trapping and scanning occur with a Gaussian laser beam at the scan velocity of 1.6 .mu.m/s and Nd:YAG laser power of 25 mW. The scattered Ar+ laser light from the ***gold*** ***particle***

is strong at high refractive indexes of the grating with periods of 1.06 .mu.m and 0.53 .mu.m, both by s and p polarized illumination. In addn., we obsd. the surface profile of the ***optical*** ***disk*** tracking groove with and without the ***gold*** ***particle*** .

ST ***gold*** ***particle*** refractive index grating ***near*** ***field*** observation

IT Diffraction gratings
Gas lasers
Planar waveguides (optical)
Refractive index
Solid state lasers
(refractive index grating fabricated on planar light waveguide circuit and ***optical*** ***disk*** tracking groove profile obsd. by scanning optically-trapped ***gold*** ***particle***)

IT 7440-00-8, Neodymium, uses
RL: MOA (Modifier or additive use); USES (Uses)
(YAG doped with; refractive index grating fabricated on planar light waveguide circuit and ***optical*** ***disk*** tracking groove profile obsd. by scanning optically-trapped ***gold*** ***particle***)

IT 12005-21-9, Aluminum yttrium oxide (Al5Y3O12)
RL: DEV (Device component use); USES (Uses)
(neodymium-doped; refractive index grating fabricated on planar light waveguide circuit and ***optical*** ***disk*** tracking groove profile obsd. by scanning optically-trapped ***gold*** ***particle***)

IT 7440-37-1, Argon, uses
RL: DEV (Device component use); USES (Uses)
(refractive index grating fabricated on planar light waveguide circuit and ***optical*** ***disk*** tracking groove profile obsd. by scanning optically-trapped ***gold*** ***particle***)

IT 7440-57-5, ***Gold*** , properties
RL: PRP (Properties)
(refractive index grating fabricated on planar light waveguide circuit and ***optical*** ***disk*** tracking groove profile obsd. by scanning optically-trapped ***gold*** ***particle***)

RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE
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(2) Furukawa, H; Opt Com 1998, V148, P221 CAPLUS
(3) Gu, M; Opt Lett 1999, V24, P76
(4) Hecht, B; J Appl Phys 1997, V81, P2492 CAPLUS
(5) Hill, K; Appl Phys Lett 1993, V62, P1035 CAPLUS
(6) Krenn, J; Phys Rev Lett 1999, V82, P2590 CAPLUS
(7) Martin, Y; J Appl Phys 2001, V89, P5774 CAPLUS
(8) Novotny, L; Phys Rev Lett 1997, V79, P645 CAPLUS
(9) Okamoto, T; Opt Rev 1999, V6, P211
(10) Raether, H; Springer Tracts in Modern Physics 1988, V3
(11) Sugiura, T; Near-Field Optics and Surface Plasmon Polaritons 2001, P143 CAPLUS
(12) Sugiura, T; Opt Let 1997, V22, P1663
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L3 ANSWER 7 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:137831 CAPLUS
DN 142:363648
ED Entered STN: 17 Feb 2005
TI Read/write mechanism for a scattered type ***super*** - ***resolution*** ***near*** - ***field*** structure using an AgOx ***mask*** layer and the smallest mark reproduced
AU Ukita, Hiroo; Ueda, Yasushi; Sasaki, Mai
CS Faculty of Science and Engineering, Ritsumeikan University, Kusatsu, 525, Japan
SO Japanese Journal of Applied Physics, Part 1: Regular Papers, Short Notes & Review Papers (2005), 44(1A), 197-201
CODEN: JAPNDE
PB Japan Society of Applied Physics
DT Journal
LA English
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other

Reprographic Processes)

AB A working mechanism for a scattered type ***super*** - ***resoln*** . ***near*** - ***field*** structure (***super*** - ***RENS***) disk using a ***silver*** oxide (AgOx) ***mask*** layer has been studied exptl. The AgOx ***mask*** layer has five possible states depending on the laser power: AgOx (as-deposited), uniformly dispersed ***Ag*** ***particles*** (after the initialization of 3.5 mW), ***Ag*** cluster (4-5 mW), ***Ag*** diffusion (5.5-7.5 mW), and a ***Ag*** ring structure (greater than 8 mW) for an objective lens numerical aperture of 0.5, a laser wavelength of 826 nm and a medium velocity of 2 m/s. On the other hand, the GeSbTe recording layer has the following possible states: crystal, halfway amorphous, completely amorphous, and gas bubble assocd. with ***Ag*** ***particles*** . For ***super*** - ***resoln*** . read power (4 mW), the ***mask*** layer will have a ***Ag*** ring structure that increases both the signal carrier to noise ratio and the resoln. limit. The authors improve the resoln. limit of 413 nm to 50 nm at the duty ratio of 10% for the write optical pulse.

ST read write optical recording super ***RENS*** structure ***silver*** oxide; ***optical*** ***disk*** ***superresoln*** ***near*** ***field*** ***silver*** oxide

IT ***Optical*** ROM ***disks***
(read/write mechanism of super- ***RENS*** ***optical*** ***disk*** using AgOx ***mask*** layer)

IT 7440-22-4, ***Silver*** , processes
RL: CPS (Chemical process); DEV (Device component use); FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); PYP (Physical process); FORM (Formation, nonpreparative); PROC (Process); USES (Uses)
(read/write mechanism of super- ***RENS*** ***optical*** ***disk*** using AgO ***mask*** layer)

IT 20667-12-3D, ***Silver*** oxide, nonstoichiometric
RL: CPS (Chemical process); DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(read/write mechanism of super- ***RENS*** ***optical*** ***disk*** using AgO ***mask*** layer)

IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses
RL: DEV (Device component use); USES (Uses)
(read/write mechanism of super- ***RENS*** ***optical*** ***disk*** using AgO ***mask*** layer)

IT 149087-96-7, Antimony indium ***silver*** telluride
RL: CPS (Chemical process); DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(recording layer; read/write mechanism of super- ***RENS*** ***optical*** ***disk*** using AgO ***mask*** layer)

RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Fuji, H; Jpn J Appl Phys 2000, V39, P980 CAPLUS
(2) Ho, F; Jpn J Appl Phys 2003, V42, P1
(3) Kataja, K; Jpn J Appl Phys 2004, V43, P160 CAPLUS
(4) Kikukawa, T; Appl Phys Lett 2002, V81, P4697 CAPLUS
(5) Kikukawa, T; Jpn J Appl Phys 2003, V42, P1038 CAPLUS
(6) Kim, J; Appl Phys Lett 2003, V83, P1701 CAPLUS
(7) Kuwahara, M; Jpn J Appl Phys 2004, V43, PL1
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(9) Tominaga, J; Appl Phys Lett 1998, V73, P2078 CAPLUS
(10) Tominaga, J; Nanotechnology 2004, V15, P411 CAPLUS
(11) Tsai, D; Jpn J Appl Phys 2000, V39, P982 CAPLUS
(12) Wei, J; Appl Phys Lett 2003, V82, P2607 CAPLUS

AN 2004:1103452 CAPLUS

DN 143:256480

ED Entered STN: 21 Dec 2004

TI ***Near*** ***field*** observation of a refractive index grating and a topographical grating by an optically-trapped ***gold*** ***particle***

AU Ukita, Hiroo; Uemi, Hirotaka

CS Faculty of Science and Engineering, Ritsumeikan University, Shiga, 525, Japan

SO   Trends in Optics and Photonics (2004), 96/A(Conference on Lasers and Electro-Optics, 2004), CTuP64/1-CTuP64/3
     CODEN: TOPRBS
PB   Optical Society of America
DT   Journal
LA   English
CC   73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
AB   A refractive index grating fabricated on a planar light waveguide circuit (PLC) and an ***optical*** ***disk*** tracking groove profile are obsd. by scanning an optically-trapped 100-nm diam. ***gold*** ***particle*** .
ST   ***gold*** ***particle*** refractive index grating ***near*** ***field*** observation
IT   Optical waveguides
       (circuits; refractive index grating fabricated on planar light waveguide circuit and ***optical*** ***disk*** tracking groove profile obsd. by scanning optically-trapped ***gold*** ***particle***)
IT   Refractive index
       (refractive index grating fabricated on planar light waveguide circuit and ***optical*** ***disk*** tracking groove profile obsd. by scanning optically-trapped ***gold*** ***particle***)
IT   12005-21-9, YAG
     RL: DEV (Device component use); PRP (Properties); USES (Uses)
       (Nd-doped; refractive index grating fabricated on planar light waveguide circuit and ***optical*** ***disk*** tracking groove profile obsd. by scanning optically-trapped ***gold*** ***particle***)
IT   7440-00-8, Neodymium, properties
     RL: DEV (Device component use); MOA (Modifier or additive use); PRP (Properties); USES (Uses)
       (dopant; refractive index grating fabricated on planar light waveguide circuit and ***optical*** ***disk*** tracking groove profile obsd. by scanning optically-trapped ***gold*** ***particle***)
IT   7440-57-5, ***Gold*** , properties
     RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)
       (refractive index grating fabricated on planar light waveguide circuit and ***optical*** ***disk*** tracking groove profile obsd. by scanning optically-trapped ***gold*** ***particle***)
RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

(1) Hecht, B; J Appl Phys 1997, V81, P2492 CAPLUS
(2) Hill, K; Appl Phys Lett 1993, V62(8), P1035
(3) Martin, Y; J Appl Phys 2001, V89(10), P5774 CAPLUS
(4) Sugiura, T; Opt Lett 1997, V22(22), P1663

L3   ANSWER 9 OF 61 CAPLUS
AN   2004:1056452 CAPLUS
DN   142:186405
ED   Entered STN: 09 Dec 2004
TI   Structural phase transition of AgOx sandwiched between ZnS-SiO2 protective layers under thermal and laser pulse annealing for ***super*** - ***resolution*** ***near*** - ***field*** recording
AU   Her, Yung-Chiun; Lan, Yuh-Chang; Hsu, Wei-Chih; Tsai, Song-Yeu
CS   Department of Materials Engineering, National Chung Hsing University, Taichung, 40254, Taiwan
SO   Japanese Journal of Applied Physics, Part 1: Regular Papers, Short Notes & Review Papers (2004), 43(11A), 7519-7523
     CODEN: JAPNDE
PB   Japan Society of Applied Physics
DT   Journal
LA   English
CC   74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
     Section cross-reference(s): 75
AB   The as-deposited AgOx prepd. at an oxygen flow ratio of 0.5 consisted of Ag2O and AgO phases. During thermal annealing, the redn. of AgO into Ag2O, decompn. of Ag2O into ***Ag*** and O2, and out diffusion and aggregation of decompd. ***Ag*** would take place successively. The chem. decompn. of AgOx film sandwiched between two ZnS-SiO2 protective

layers was confirmed to be an irreversible process. As being irradiated by a high power laser pulse similar to the recording process, a hollow ***Ag*** cylinder, or ring, serving as an aperture, was formed in the AgOx ***mask*** layer, and small ***Ag*** ***particles*** , serving as light-scattering centers, were pptd. in the center region. During the readout process, the small aperture can significantly reduce the readout laser spot size, while the strong ***near*** - ***field*** interaction between pptd. ***Ag*** ***particles*** and sub-wavelength marks can effectively enhance the readout signal. That elucidates the recording and readout mechanisms of ***super*** - ***resoln*** . ***near*** - ***field*** structure disk with an AgOx ***mask*** layer.

ST optical recording readout mechanisms ***superresoln*** ***near*** ***field*** structure disk; structural phase transition ***silver*** oxide thermal annealing laser pulse

IT Laser radiation
(pulsed; structural phase transition of AgOx sandwiched between ZnS-SiO2 layers under thermal- and laser pulse annealing for ***super*** - ***resoln*** . ***near*** - ***field*** recording)

IT Annealing
Laser annealing
Multilayers
Optical ***disks***
Optical recording
Structural phase transition
(structural phase transition of AgOx sandwiched between ZnS-SiO2 layers under thermal- and laser pulse annealing for ***super*** - ***resoln*** . ***near*** - ***field*** recording)

IT Reduction
(thermal; structural phase transition of AgOx sandwiched between ZnS-SiO2 layers under thermal- and laser pulse annealing for ***super*** - ***resoln*** . ***near*** - ***field*** recording)

IT 1301-96-8, ***Silver*** oxide (AgO) 20667-12-3, ***Silver*** oxide (Ag2O)
RL: CPS (Chemical process); DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(structural phase transition of AgOx sandwiched between ZnS-SiO2 layers under thermal- and laser pulse annealing for ***super*** - ***resoln*** . ***near*** - ***field*** recording)

IT 7440-22-4P, ***Silver*** , processes
RL: CPS (Chemical process); DEV (Device component use); PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process); USES (Uses)
(structural phase transition of AgOx sandwiched between ZnS-SiO2 layers under thermal- and laser pulse annealing for ***super*** - ***resoln*** . ***near*** - ***field*** recording)

IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses 16150-49-5, Antimony germanium telluride (Sb2Ge2Te5)
RL: DEV (Device component use); USES (Uses)
(structural phase transition of AgOx sandwiched between ZnS-SiO2 layers under thermal- and laser pulse annealing for ***super*** - ***resoln*** . ***near*** - ***field*** recording)

RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Buchel, D; J Magn Soc Jpn 2001, V25, P240 CAPLUS
(2) Fuji, H; Jpn J Appl Phys 2000, V39, P980 CAPLUS
(3) Fukaya, T; J Appl Phys 2001, V89, P6139 CAPLUS
(4) Ho, F; Jpn J Appl Phys 2003, V42, P1000 CAPLUS
(5) Kikukawa, T; Jpn J Appl Phys 2003, V42, P1038 CAPLUS
(6) Kolobov, A; Jpn J Appl Phys 2003, V42, P1022 CAPLUS
(7) Liu, W; Appl Phys Lett 2001, V78, P685 CAPLUS
(8) Liu, W; Jpn J Appl Phys 2003, V42, P1031 CAPLUS
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(10) Shima, T; J Vac Sci Technol A 2003, V21, P634 CAPLUS
(11) Shima, T; Thin Solid Films 2003, V425, P31 CAPLUS
(12) Tominaga, J; Jpn J Appl Phys 2000, V39, P957 CAPLUS
(13) Tominaga, J; Jpn J Appl Phys 2001, V40, P1831 CAPLUS

L3 ANSWER 10 OF 61 CAPLUS
AN 2004:1006744 CAPLUS

DN 143:183047
ED Entered STN: 23 Nov 2004
TI Numerically investigating ***near*** - ***field*** scattering for spatial enhancement of single irregular nano plasma ***particle***
AU Chen, Sheng Chung; Tsai, Din Ping
CS Department of Electrical Engineering, Far East College, Tainan, Taiwan
SO Scanning (2004), 26(5, Suppl. 1), I/109-I/112
CODEN: SCNNDF; ISSN: 0161-0457
PB FAMS, Inc.
DT Journal
LA English
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
AB ***Near*** - ***field*** scattering from a nano ***silver*** ***particle*** has been studied with an optical wave passing through it. The scattered field was found to be enhanced around the semisphere on which the incident wave impinges. Comparing it with the spherical ***particle*** , the irregular shape of a nanoparticle only changes the distribution of the scattered field. In this investigation, approached by finite difference time domain (FDTD), it was revealed that the peak value of the scattered field is proportional to the ***particle*** radius; this might be due to the fact that more plasmons could be excited. Furthermore, the highest enhancement occurred at the incident frequency close to plasma frequency of ***silver*** (.apprx.2000 THz). Thus, the numerical results could give a guide for optimizing AgOx type ***super*** ***resoln*** . ***near*** - ***field*** structure (***RENS***) applications. When the red light source can be replaced with shorter wavelength ones, or larger ***silver*** ***particles*** can be segregated, the ***near*** - ***field*** scattered enhancement might result.
ST ***near*** ***field*** scattering spatial enhancement single irregular nanoplasma ***silver***
IT Algorithm
Evanescent wave
Nanoparticles
Optical ***disks***
Surface plasmon
(numerically investigating ***near*** - ***field*** scattering for spatial enhancement of single irregular nano plasma ***particle***)
IT 7440-22-4, ***Silver*** , properties
RL: PRP (Properties)
(numerically investigating ***near*** - ***field*** scattering for spatial enhancement of single irregular nano plasma ***particle***)
RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Bohren, C; Absorption and Scattering of Light by Small Particles 1983
(2) Ishimaru, A; Electromagnetic Wave Propagation, Radiation and Scattering 1991
(3) Kunz, K; The Finite Difference Time Domain Method for Electromagnetics 1993
(4) Liu, W; Appl Phys Lett 2001, V78, P685 CAPLUS
(5) Sullivan, D; IEEE Microwave Guided Wave Lett 1996, V6, P97

L3 ANSWER 11 OF 61 CAPLUS
AN 2004:687006 CAPLUS
DN 141:322145
ED Entered STN: 23 Aug 2004
TI Signal characteristics of ***super*** - ***resolution*** ***near*** - ***field*** structure ***disk*** in blue ***laser*** system
AU Kim, Jooho; Hwang, Inoh; Kim, Hyunki; Yoon, Duseop; Park, Insik; Shin, Dongho; Park, Yunchang; Tominaga, Junji
CS Digital Media R&D Center, Samsung Electronics Co., Ltd, Suwon, 442-742, S. Korea
SO Japanese Journal of Applied Physics, Part 1: Regular Papers, Short Notes & Review Papers (2004), 43(7B), 4921-4924
CODEN: JAPNDE
PB Japan Society of Applied Physics
DT Journal
LA English
CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related

Properties)
Section cross-reference(s): 74

AB The authors report the signal characteristics of a ***super*** - ***resoln*** . ***near*** - ***field*** structure (***super*** - ***RENS***) ***disk*** in a blue ***laser*** system (laser wavelength, 405 nm; numerical aperture (NA), 0.85). By introducing a new structure for the blue laser system, a 42.5 dB carrier to noise ratio (CNR) at a 50-nm-mark-length-signal (which is equiv. to a 75 GB capacity with a 0.32 .mu.m track pitch and a 1-7 modulation code (Blu-ray disk (BD) format)) and a much higher readout-stability were obtained. Transmission electron microscope (TEM) image anal. revealed that the new blue structure has clear diffusion protection barriers produced by continuous ***Pt*** ***particles*** , which is related to higher CNR and readout stability characteristics.

ST signal ***super*** ***resoln*** ***near*** ***field*** structure ***disk*** blue ***laser***

IT Lasers
Optical ***disks***
Optical recording
(signal characteristics of ***super*** - ***resoln*** . ***near*** - ***field*** structure ***disk*** in blue ***laser*** system)

IT Polycarbonates, uses
RL: DEV (Device component use); USES (Uses)
(signal characteristics of ***super*** - ***resoln*** . ***near*** - ***field*** structure ***disk*** in blue ***laser*** system)

IT 1314-98-3, Zinc sulfide, properties 7440-06-4, ***Platinum*** , properties 7631-86-9, Silica, properties 11129-89-8, ***Platinum*** oxide 127860-51-9, Antimony germanium telluride
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(signal characteristics of ***super*** - ***resoln*** . ***near*** - ***field*** structure ***disk*** in blue ***laser*** system)

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE
(1) Abe, Y; Jpn J Appl Phys 1999, V38, P2092 CAPLUS
(2) Daly-Flynn, K; Jpn J Appl Phys 2003, V42, P795 CAPLUS
(3) Day, D; Appl Phys Lett 2002, V80, P2404 CAPLUS
(4) Fuji, H; Jpn J Appl Phys 2000, V39, P980 CAPLUS
(5) Guo, F; Appl Opt 2000, V39, P324
(6) Irie, M; Science 2001, V291, P1769 CAPLUS
(7) Kawata, S; Chem Rev 2000, V100, P1777 CAPLUS
(8) Kikukawa, T; Appl Phys Lett 2002, V81, P4697 CAPLUS
(9) Kim, J; Appl Phys Lett 2000, V77, P1774 CAPLUS
(10) Kim, J; Appl Phys Lett 2001, V79, P2600 CAPLUS
(11) Kim, J; Appl Phys Lett 2003, V83, P1701 CAPLUS
(12) Kim, J; Jpn J Appl Phys 2003, V42, P1014 CAPLUS
(13) Mishima, K; SPIE 2003, V5069, P90 CAPLUS
(14) Ohtsu, M; Small Particle of Light 2001, P36
(15) Shen, Y; The Principles of Nonlinear Optics 1984, P541
(16) Tominaga, J; Appl Phys Lett 1998, V73, P2078 CAPLUS

AN 2004:680837 CAPLUS
DN 141:215338
ED Entered STN: 20 Aug 2004
TI ***Optical*** amplifier ***disk*** and ***optical*** amplification
IN Tominaga, Junji; Nakano, Takashi; Kuwahara, Masashi; Fuji, Hiroshi; Kikugawa, Takashi
PA National Institute of Advanced Industrial Science and Technology, Japan; Sharp Corp.; TDK Corporation
SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H01S003-10
ICS G02F001-01; G02F003-00; H01S003-06
CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
FAN.CNT 1

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     PATENT NO.          KIND   DATE         APPLICATION NO.        DATE
     ---------------     ----   --------     --------------------   --------
PI   JP 2004235259        A2    20040819     JP 2003-19436          20030128
PRAI JP 2003-19436              20030128
CLASS
 PATENT NO.      CLASS  PATENT FAMILY CLASSIFICATION CODES
 -------------   -----  ----------------------------------------------
 JP 2004235259   ICM    H01S003-10
                 ICS    G02F001-01; G02F003-00; H01S003-06
                 IPCI   H01S0003-10 [ICM,7]; G02F0001-01 [ICS,7]; G02F0003-00
                        [ICS,7]; H01S0003-06 [ICS,7]
                 FTERM  2H079/AA08; 2H079/AA13; 2H079/BA01; 2H079/CA01;
                        2H079/CA04; 2H079/CA09; 2H079/KA14; 2K002/AA01;
                        2K002/AA03; 2K002/AB23; 2K002/BA01; 5F072/AB20;
                        5F072/JJ01; 5F072/JJ20; 5F072/PP10; 5F072/RR01;
                        5F072/YY17
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AB The invention relates to an ***optical*** amplifier ***disk*** , providing the ***optical*** amplification in IR-visible regions, comprising a high speed rotating ***optical*** ***disk*** having the layered structure of a light-scattering film stacked with a surface plasmon light-generating film through a protective film, wherein the scattering light generated at the light-scattering film is amplified by the surface plasmon light generated at the surface plasmon light-generating film that forms the ***super*** ***resoln*** . ***near*** - ***field*** structure with the light-scattering film. The light-scattering film may be produced a transparent ceramic dispersed with metal ***particles*** or the ***particle*** made of the substance selected from ***platinum*** oxide, palladium oxide, ***silver*** oxide, cobalt oxide, tellurium oxide, tungsten oxide and ***silver*** iodide. And the surface plasmon light-generating film may be mainly composed of GeSbTe, AgInSbTe, TbFeCo, ***Pt*** , Pd, ***Au*** , ***Ag*** , Co, Al and their alloys.

ST ***optical*** amplifier ***disk*** ***super*** ***resoln*** ***near*** ***field*** structure

IT ***Optical*** amplifiers
Optical ***disks***
Surface plasmon
(***optical*** amplifier ***disk*** and ***optical*** amplification)

IT Alloys, uses
RL: DEV (Device component use); USES (Uses)
(***optical*** amplifier ***disk*** and ***optical*** amplification)

IT 1314-35-8, Tungsten oxide, uses 7429-90-5, Aluminum, uses 7440-05-3, Palladium, uses 7440-06-4, ***Platinum*** , uses 7440-22-4, ***Silver*** , uses 7440-48-4, Cobalt, uses 7440-57-5, ***Gold*** , uses 7446-07-3, Tellurium oxide 7783-96-2, ***Silver*** iodide 11104-61-3, Cobalt oxide 11113-77-2, Palladium oxide 11129-89-8, ***Platinum*** oxide 16150-49-5, Antimony germanium telluride (Sb2Ge2Te5) 20667-12-3D, ***Silver*** oxide (Ag2O), non-stoichiometric 94858-24-9 127860-51-9, Antimony germanium telluride 181280-64-8, Antimony indium ***silver*** telluride (SbInAgTe)
RL: DEV (Device component use); USES (Uses)
(***optical*** amplifier ***disk*** and ***optical*** amplification)

L3 ANSWER 13 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:632452 CAPLUS
DN 141:164903
ED Entered STN: 06 Aug 2004
TI ***Optical*** recording ***medium*** having ultra-high resolution ***near*** - ***field*** structure, recording method, regeneration method, recording device,a nd regeneration device
IN Kim, Soo-ho; Tominaga, Junji; Kikugawa, Takashi
PA Samsung Japan Co., Ltd., Japan; National Institute of Advanced Industrial Science and Technology; TDK Corporation
SO Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G11B007-24

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2004220687	A2	20040805	JP 2003-6292	20030114
PRAI JP 2003-6292		20030114		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2004220687	ICM	G11B007-24
	IPCI	G11B0007-24 [ICM,7]
	FTERM	5D029/JA01; 5D029/JB23; 5D029/JC11; 5D029/KA07; 5D029/LA17; 5D029/LB11; 5D029/NA23; 5D029/NA24

AB Disclosed is the ***optical*** recording ***medium*** comprising a polycarbonate layer, a 2nd dielec. layer, a 2nd layer having a m.p. near the recording power point, a 2nd hard protective layer, a recording layer, a 1st hard protective layer, a 1st layer having a m.p. near the recording power point, and a 1st dielec. layer. A laser beam is directed to the recording layer contg. ***Pt*** oxide, Pd oxide, or ***Ag*** oxide to pyrolyze the recording layer, thereby forming cavities contg. and oxygen and a ***particle*** of ***Pt*** , Pd, or ***Ag*** and expanding toward the 1st and 2nd layers.

ST optical recording ultra high resoln ***near*** ***field*** structure

IT ***Optical*** ***disks***
Optical recording
(***optical*** recording ***medium*** having ultra-high resoln. ***near*** - ***field*** structure)

IT Polycarbonates, uses
Telluride glasses
RL: DEV (Device component use); USES (Uses)
(***optical*** recording ***medium*** having ultra-high resoln. ***near*** - ***field*** structure)

IT 7440-05-3, Palladium, processes 7440-06-4, ***Platinum*** , processes 7782-44-7, Oxygen, processes
RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(***optical*** recording ***medium*** having ultra-high resoln. ***near*** - ***field*** structure)

IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses 13494-80-9, Tellurium, uses
RL: DEV (Device component use); USES (Uses)
(***optical*** recording ***medium*** having ultra-high resoln. ***near*** - ***field*** structure)

IT 11113-77-2, Palladium oxide 11113-88-5, ***Silver*** oxide 11129-89-8, ***Platinum*** oxide
RL: NUU (Other use, unclassified); USES (Uses)
(***optical*** recording ***medium*** having ultra-high resoln. ***near*** - ***field*** structure)

IT 7440-22-4, ***Silver*** , uses 7440-36-0, Antimony, uses 7440-74-6, Indium, uses
RL: DEV (Device component use); USES (Uses)
(telluride glass; ***optical*** recording ***medium*** having ultra-high resoln. ***near*** - ***field*** structure)

L3 ANSWER 14 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:620502 CAPLUS
DN 141:304162
ED Entered STN: 04 Aug 2004
TI Effect of constituent phases of reactively sputtered AgOx film on recording and readout mechanisms of ***super*** - ***resolution*** ***near*** - ***field*** structure disk
AU Her, Yung-Chiun; Lan, Yuh-Chang; Hsu, Wei-Chih; Tsai, Song-Yeu
CS Department of Materials Engineering, National Chung Hsing University, Taichung, 40254, Taiwan
SO Journal of Applied Physics (2004), 96(3), 1283-1288
CODEN: JAPIAU; ISSN: 0021-8979
PB American Institute of Physics
DT Journal
LA English
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other

Reprographic Processes)
AB We have studied the dependence of the constituent phases of reactively sputtered AgOx ***mask*** layer on the recording and readout mechanisms of ***super*** - ***resoln*** . ***near*** - ***field*** disk. At low oxygen flow ratios, the AgOx ***mask*** layer was found to be composed of an appreciable amt. of ***Ag*** ***particles*** with sizes of tens of nanometers and Ag2O phase. After recording by a high power laser pulse, a hollow ***Ag*** cylinder that had its center filled with O2 was formed in the AgOx ***mask*** layer. The hollow ***Ag*** cylinder would serve as an aperture and could effectively reduce the laser spot size during readout, leading to the ***super*** - ***resoln*** . effect only. At high oxygen flow ratios, the AgOx ***mask*** layer was found to be mostly composed of Ag2O and/or AgO phases. After recording by a high power laser pulse, a hollow ***Ag*** cylinder that had its center filled with nanosized ***Ag*** ***particles*** was formed in the AgOx ***mask*** layer. The nanosized ***Ag*** ppts. would serve as light-scattering centers and could yield strong ***near*** - ***field*** interaction with the subwavelength marks, resulting in both the ***super*** - ***resoln*** . and ***near*** - ***field*** effects during readout.
ST effect phase ***silver*** oxide film recording readout nearfield disk
IT Decomposition
(effect of AgOx film decompn. on recording and readout mechanisms of ***super*** - ***resoln*** . ***near*** - ***field*** structure disk)
IT Microstructure
Optical ***disks***
Optical recording
(effect of constituent phases of reactively sputtered AgOx film on recording and readout mechanisms of ***super*** - ***resoln*** . ***near*** - ***field*** structure disk)
IT 178255-68-0, Silicon zinc oxide sulfide (Si0.1Zn0.4O0.2S0.4)
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(effect of AgOx film decompn. on recording and readout mechanisms of ***super*** - ***resoln*** . ***near*** - ***field*** structure disk)
IT 1301-96-8P, ***Silver*** oxide (AgO) 7440-22-4P, ***Silver*** , properties 11113-88-5P, ***Silver*** oxide 20667-12-3P, ***Silver*** oxide
RL: PNU (Preparation, unclassified); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(effect of constituent phases of reactively sputtered AgOx film on recording and readout mechanisms of ***super*** - ***resoln*** . ***near*** - ***field*** structure disk)
IT 16150-49-5, Antimony germanium telluride (Sb2Ge2Te5)
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(effect of constituent phases of reactively sputtered AgOx film on recording and readout mechanisms of ***super*** - ***resoln*** . ***near*** - ***field*** structure disk)
RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
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L3 ANSWER 15 OF 61 CAPLUS
AN 2004:346659 CAPLUS
DN 141:79241
ED Entered STN: 28 Apr 2004
TI Thermal simulation for a two-dimensional ***near*** - ***field*** optical recording system using a vertical-cavity surface-emitting laser
AU Kurihara, Kazuma; Nanri, Kenzo; Goto, Kenya
CS School of Science, Department of Physics, Tokai University, Hiratsuka, Kanagawa, 259-1292, Japan

SO Applied Physics Letters (2004), 84(17), 3415-3417
CODEN: APPLAB; ISSN: 0003-6951
PB American Institute of Physics
DT Journal
LA English
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
AB An optical recording method with high throughput is required to create a two-dimensional ***near*** - ***field*** optical memory system using a vertical-cavity surface-emitting laser (VCSEL). Optical recording is possible with the combination of a ***near*** - ***field*** probe and patterned medium. A patterned medium consisting of 40 nm periodic dots with phase change medium and ***silver*** nanoparticles were used for plasmon resonance induced by an electromagnetic wave. The elec. field power d. at the ***silver*** nanoparticles was increased about 87 000 times over that with a structure without patterned medium. Heat from this structure is effectively used by thermal conduction out of a ***silver*** nanoparticle and by concg. the heat on a ***particle*** . When the 1 mW optical intensity from a VCSEL is used, ***near*** - ***field*** optical recording is achieved. The recorded feature size was estd. at 40 nm. In this letter, a recording method is described using plasmon resonance and thermal conduction effects.
ST ***near*** ***field*** optical recording vertical cavity surface emitting laser; plasmon resonance thermal conduction effect ***near*** ***field*** optical recording

IT ***Optical*** ***disks***
(phase change; thermal simulation fora two-dimensional ***near*** - ***field*** optical recording system using vertical-cavity surface-emitting laser)

IT Surface plasmon
(resonance; thermal simulation fora two-dimensional ***near*** - ***field*** optical recording system using vertical-cavity surface-emitting laser)

IT Laser radiation
Thermal conductivity
(thermal simulation fora two-dimensional ***near*** - ***field*** optical recording system using vertical-cavity surface-emitting laser)

IT Optical memory devices
Optical recording
(two-dimensional ***near*** - ***field*** optical recording system using vertical-cavity surface-emitting laser)

IT Semiconductor lasers
(vertical-cavity surface-emitting; two-dimensional ***near*** - ***field*** optical recording system using vertical-cavity surface-emitting laser)

IT 7440-22-4, ***Silver*** , processes
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(nanoparticles; thermal simulation fora two-dimensional ***near*** - ***field*** optical recording system using vertical-cavity surface-emitting laser)

IT 12063-98-8, Gallium phosphide, uses
RL: DEV (Device component use); USES (Uses)
(probe; thermal simulation fora two-dimensional ***near*** - ***field*** optical recording system using vertical-cavity surface-emitting laser)

RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD

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L3 ANSWER 16 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:254691 CAPLUS
DN 140:397329
ED Entered STN: 29 Mar 2004
TI Numerical study of the AgOx ***super*** ***resolution*** structure
AU Kataja, Kari; Olkkonen, Juuso; Aikio, Janne; Howe, Dennis
CS VTT Electronics, Oulu, FIN-90571, Finland
SO Japanese Journal of Applied Physics, Part 1: Regular Papers, Short Notes & Review Papers (2004), 43(1), 160-167
CODEN: JAPNDE
PB Japan Society of Applied Physics
DT Journal
LA English
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
AB The ***super*** ***resoln*** . ***near*** ***field*** structure (SR) which incorporates an AgOx thin film was studied using a finite difference time domain modeling tool. The goal is to explain the phys. mechanism(s) responsible for the SR phenomenon in these types of structures. Both absorption and readout characteristics were studied. Modeling results indicate that the SR structure which contains a AgOx active layer can produce ***super*** - ***resoln*** . when the aperture formed in the active layer consists of a annular cylinder of small ***Ag*** ***particles*** which surround a transparent homogeneous "hole" filled with a low index material such as O2.
ST ***silver*** oxide ***near*** ***field*** structure optical data storage
IT Simulation and Modeling
(finite-difference-time-domain; numerical study of AgOx ***super*** ***resoln*** . ***near*** ***field*** structure in ***optical*** storage ***medium***)
IT ***Optical*** ***disks***
Optical recording
Optical recording materials
(numerical study of AgOx ***super*** ***resoln*** . ***near*** ***field*** structure in ***optical*** storage ***medium***)
IT 1314-98-3, Zinc sulfide, properties 7631-86-9, Silica, properties 16150-49-5, Germanium antimony telluride(Ge2Sb2Te5) 20667-12-3D, ***Silver*** oxide (Ag2O), nonstoichiometric
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process)
(numerical study of AgOx ***super*** ***resoln*** . ***near*** ***field*** structure in ***optical*** storage ***medium***)
RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD
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L3   ANSWER 17 OF 61  CAPLUS  COPYRIGHT 2006 ACS on STN
AN   2003:817848  CAPLUS
DN   139:314572
ED   Entered STN:  17 Oct 2003
TI     ***Super***     ***resolution***     ***optical***     ***disk***
     mother mold
IN   Chen, Bing Mau
PA   Taiwan
SO   U.S. Pat. Appl. Publ., 24 pp.
     CODEN: USXXCO
DT   Patent
LA   English
IC   ICM  B29D011-00
     ICS  C25D003-12
INCL 264001360; 264002500; 205271000
CC   74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
     Reprographic Processes)
FAN.CNT 1
     PATENT NO.          KIND   DATE       APPLICATION NO.        DATE
     ---------------     ----   --------   --------------------   --------
PI   US 2003193101        A1    20031016   US 2003-248689         20030210
     TW 569211            B     20040101   TW 2002-91107274       20020411
     CN 1453779           A     20031105   CN 2002-118601         20020425
     JP 2003323748        A2    20031114   JP 2003-107653         20030411
PRAI TW 2002-91107274     A     20020411
CLASS
 PATENT NO.      CLASS  PATENT FAMILY CLASSIFICATION CODES
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 US 2003193101   ICM    B29D011-00
                 ICS    C25D003-12
                 INCL   264001360; 264002500; 205271000
                 IPCI   B29D0011-00 [ICM,7]; C25D0003-12 [ICS,7]
                 IPCR   B29C0033-38 [I,A]; B29C0033-38 [I,C]; B29C0045-26
                        [N,A]; B29C0045-26 [N,C]; B29D0017-00 [I,A];
                        B29D0017-00 [I,C]; C25D0001-00 [I,C]; C25D0001-10 [I,A]
                 NCL    264/001.360
                 ECLA   B29C033/38M; B29D017/00C; C25D001/10
 TW 569211       IPCI   G11B0007-26 [ICM,7]; G11B0007-24 [ICS,7]
 CN 1453779      IPCI   G11B0007-26 [ICM,7]
 JP 2003323748   IPCI   G11B0007-26 [ICM,7]
AB   A  ***super***    ***resoln***  .   ***optical***     ***disk***
     mother mold, having a substrate, a   ***super***     ***resoln***  .
     structure and a patterned photoresist layer.  The   ***super***
       ***resoln***  . is disposed between the substrate and the patterned
     photoresist layer.  The   ***super***     ***resoln***  .   ***optical***
       ***disk***   mother mold is fabricated on the substrate prior to formation
     of the photoresist layer.  The above process does not cause the problem of
     pre-exposing the photoresist layer.  In addn., the surface roughness
     caused by thin-film   ***particle***   will not occur to the
       ***optical***     ***disk***   mother mold fabricated by the above
     process.  Therefore, the   ***optical***     ***disk***   stamper made by
     the   ***optical***     ***disk***   mother mold will not suffer from the
     problem of the surface roughness.
ST     ***super***     ***resoln***     ***optical***     ***disk***   mother
     mold
IT     ***Optical***     ***disks***
        (  ***super***     ***resoln***  .   ***optical***     ***disk***
        mother mold)
IT   Photoresists
        (  ***super***     ***resoln***  .   ***optical***     ***disk***
        mother mold contg.)
IT   409-21-2, Silicon carbide, uses   1314-36-9, Yttrium oxide, uses
     1314-61-0, Tantalum oxide   1314-98-3, Zinc sulfide, uses   7631-86-9,
     Silicon oxide, uses   11116-16-8, Titanium nitride   12033-89-5, Silicon
     nitride, uses   24304-00-5, Aluminum nitride   51845-89-7, Germanium
     nitride
     RL: DEV (Device component use); USES (Uses)
        (dielec. layer;   ***super***     ***resoln***  .   ***optical***
          ***disk***   mother mold contg.)
IT   7440-22-4,   ***Silver***  , uses   7440-31-5, Tin, uses   7440-36-0,
     Antimony, uses   7440-38-2, Arsenic, uses   7440-55-3, Gallium, uses
     7440-56-4, Germanium, uses   7440-62-2, Vanadium, uses   7440-66-6, Zinc,
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uses 7440-74-6, Indium, uses 7782-49-2, Selenium, uses 13494-80-9, Tellurium, uses
RL: DEV (Device component use); USES (Uses)
(***super*** ***resoln*** . ***optical*** ***disk*** mother mold contg.)

L3 ANSWER 18 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:816230 CAPLUS
DN 140:329412
ED Entered STN: 17 Oct 2003
TI Optical nonlinear features and response mechanisms of PtO2 and PdO1.1 ***masks*** for optical data storage with ***superresolution*** ***near*** - ***field*** structure
AU Liu, Qian; Fukaya, Toshio; Tominaga, Junji; Kim, Jong H.; Kikukawa, Takashi
CS Laboratory for Advanced Optical Technology(LAOTHCH), National Institute of Advanced Industrial Science and Technology, Ibaraki, 305-8562, Japan
SO Proceedings of SPIE-The International Society for Optical Engineering (2003), 5069(Optical Data Storage 2003), 144-149
CODEN: PSISDG; ISSN: 0277-786X
PB SPIE-The International Society for Optical Engineering
DT Journal
LA English
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
AB Nonlinear properties and response mechanisms of PtO2 and PdO1.1 ***mask*** layers for optical data storage with ***super*** - ***resoln*** . ***near*** - ***field*** structure were investigated. The results obtained from Z-scan measurement was supported by microscopic observation studies. The 5.1 mW and 6.5 mW, resp., as the decompn. threshold of the PdO1.1 and PtO2 for leading to metallic nanoparticles were confirmed. The scanned PdO1.1 and PtO2 ***mask*** samples could be retrieved at less than their own threshold values. It was also found for the PdO1.1 and PtO2 ***mask*** samples that the nonlinear optical response not only came from the metallic ***particles*** but also from the bubble deformation.
ST nonlinear response ***platinum*** oxide ***optical*** ***disk***
IT Nonlinear optical properties
Optical ***disks***
Optical recording materials
Optical reflection
(***optical*** nonlinear response mechanisms of PtO2 and PdO1.1 ***masks*** for optical data storage with ***superresoln*** . ***near*** - ***field*** structure)
IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses
RL: DEV (Device component use); USES (Uses)
(optical nonlinear response mechanisms of PtO2 and PdO1.1 ***masks*** for optical data storage with ***superresoln*** . ***near*** - ***field*** structure)
IT 1314-15-4, ***Platinum*** dioxide 12035-82-4D, ***Platinum*** oxide (PtO), nonstoichiometric
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(optical nonlinear response mechanisms of PtO2 and PdO1.1 ***masks*** for optical data storage with ***superresoln*** . ***near*** - ***field*** structure)
RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD
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L3 ANSWER 19 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:727336 CAPLUS
DN 139:371755
ED Entered STN: 17 Sep 2003

TI Recording and readout mechanisms of ***super*** - ***resolution*** ***near*** - ***field*** structure disk with a ***silver*** oxide ***mask*** layer
AU Her, Yung-Chiun; Lan, Yuh-Chang; Hsu, Wei-Chih; Tsai, Song-Yeu
CS Department of Materials Engineering, National Chung Hsing University, Taichung, 40254, Taiwan
SO Applied Physics Letters (2003), 83(11), 2136-2138
CODEN: APPLAB; ISSN: 0003-6951
PB American Institute of Physics
DT Journal
LA English
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
AB The chem. decompn. of AgOx sandwiched between two ZnS-SiO2 protective layers was an irreversible process. The authors confirmed that a hollow ***Ag*** cylinder, or ring, serving as an aperture, was formed and small ***Ag*** ***particles*** were pptd. in the center region during the recording process. The small aperture can significantly reduce the laser spot size during the readout process and the strong ***near*** - ***field*** interaction between pptd. ***Ag*** ***particles*** and subwavelength marks can effectively enhance the readout signal. That clarifies both the ***super*** - ***resoln*** . effect and the ***near*** - ***field*** interaction in the ***super*** - ***resoln*** . ***near*** - ***field*** structure disk.
ST recording readout ***superresoln*** ***near*** ***field*** ***optical*** ***disk*** ***silver*** oxide
IT Annealing
Decomposition
Optical recording
Reduction
(phase transition and chem. decompn. of AgOx between two ZnS-SiO2 layers under annealing in relation to recording and readout mechanisms of super- ***RENS*** ***optical*** ***disks***)
IT ***Optical*** ***disks***
(super- ***RENS*** ; phase transition and chem. decompn. of AgOx between two ZnS-SiO2 layers under annealing in relation to recording and readout mechanisms of super- ***RENS*** ***optical*** ***disks***)
IT 1301-96-8, ***Silver*** oxide(AgO) 7440-22-4, ***Silver*** , processes
RL: CPS (Chemical process); DEV (Device component use); FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); FORM (Formation, nonpreparative); PROC (Process); USES (Uses)
(phase transition and chem. decompn. of AgOx between two ZnS-SiO2 layers under annealing in relation to recording and readout mechanisms of super- ***RENS*** ***optical*** ***disks***)
IT 20667-12-3, ***Silver*** oxide(Ag2O) 20667-12-3D, ***Silver*** oxide, nonstoichiometric
RL: CPS (Chemical process); DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(phase transition and chem. decompn. of AgOx between two ZnS-SiO2 layers under annealing in relation to recording and readout mechanisms of super- ***RENS*** ***optical*** ***disks***)
IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses
RL: DEV (Device component use); USES (Uses)
(phase transition and chem. decompn. of AgOx between two ZnS-SiO2 layers under annealing in relation to recording and readout mechanisms of super- ***RENS*** ***optical*** ***disks***)
RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
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(6) Tominaga, J; Jpn J Appl Phys, Part 1 2001, V40, P1831 CAPLUS

L3 ANSWER 20 OF 61 CAPLUS
AN 2003:613378 CAPLUS
DN 139:282519
ED Entered STN: 11 Aug 2003

TI The application of ***silver*** oxide thin films to plasmon photonic devices

AU Tominaga, Junji
CS Centre for Applied Near-Field Optics Research (CAN-FOR), National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, 305-8562, Japan

SO Journal of Physics: Condensed Matter (2003), 15(25), R1101-R1122
CODEN: JCOMEL; ISSN: 0953-8984
PB Institute of Physics Publishing
DT Journal; General Review
LA English
CC 73-0 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)

AB A review. ***Ag*** has long been used for mirrors and tableware due to its high reflectivity, and it is still a very important component in optics. In ***particular*** , ***Ag*** island films or small ***particles*** were applied as photog. materials, tools and devices to generate localized elec. fields for mol. detection and elec. field enhancement. It has recently been discovered that ***Ag*** oxide thin films may be a very useful material for dealing with optical ***near*** - ***field*** and surface plasmons. ***Ag*** oxide decomps. into O and small metallic ***Ag*** ***particles*** , and this characteristic was applied to ultrahigh-d. optical data storage to create a strong light-scattering center that resolves small pits or marks beyond the diffraction limit. More recently, ***Ag*** film can be cheaply and easily transformed into ***Ag*** nanoparticles and nanowires in a gas mixt. of H and O in a vacuum chamber. The ***particle*** and wire diams. are very uniform and .apprx.20-50 nm, and they can be three-dimensionally fabricated on almost all material surfaces without the need for thermal annealing. ***Ag*** nanoparticles and wires will soon appear in small and cheap mol. detection sensors by small precise adjustments for generating surface plasmon conditions.

ST review ***silver*** oxide thin film plasmon photonic device

IT Laser annealing
Laser radiation
Light scattering
Optical ***disks***
Optical gain
Optical recording
Photonics
Plasmon
(application of ***silver*** oxide thin films to plasmon photonic devices)

IT 20667-12-3D, ***Silver*** oxide (Ag_2O), non-stoichiometric
RL: DEV (Device component use); USES (Uses)
(application of ***silver*** oxide thin films to plasmon photonic devices)

RE.CNT 58 THERE ARE 58 CITED REFERENCES AVAILABLE FOR THIS RECORD

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L3 ANSWER 21 OF 61 CAPLUS
AN 2003:465962 CAPLUS
DN 139:157318
ED Entered STN: 18 Jun 2003
TI Bit-by-bit detection on ***super*** - ***resolution*** ***near*** - ***field*** structure disk with ***platinum*** oxide layer
AU Fuji, Hiroshi; Kikukawa, Takashi; Tominaga, Junji
CS Advanced Technology Research Laboratories, Sharp Corporation, Nara, 632-8567, Japan
SO Japanese Journal of Applied Physics, Part 2: Letters (2003), 42(6A), L589-L591
CODEN: JAPLD8
PB Japan Society of Applied Physics
DT Journal
LA English
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
AB Bit-by-bit detection at a recording d. of 0.11 .mu.m pits is achieved on a ***super*** - ***resoln*** . ***near*** - ***field*** structure (***super*** - ***RENS***) disk with a ***platinum*** oxide layer. Pits and spaces are arranged as a recording pattern for pit position recording. The pattern is recorded on the disk with using a 635-nm wavelength laser and an objective lens with a 0.6 numerical aperture. After recording using laser pulses with pre- and post-heating, the pattern is correctly reproduced despite a size that is smaller than the resoln. limit. Furthermore, the readout durability is more improved than that of the previous ***silver*** oxide disk. The pattern is clearly digitized by a read channel circuit for bit-by-bit detection.
ST ***super*** ***resoln*** ***near*** ***field*** ***optical*** ***disk*** ***platinum*** oxide layer; ***optical*** recording super REN ***disk*** ***platinum*** oxide layer
IT Optical recording

Optical recording materials
(bit-by-bit detection on ***super*** - ***resoln*** . ***near*** - ***field*** structure disk with ***platinum*** oxide layer)
IT ***Optical*** ***disks***
(super- ***RENS*** ; bit-by-bit detection on ***super*** - ***resoln*** . ***near*** - ***field*** structure disk with ***platinum*** oxide layer)
IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses 149087-96-7, Antimony indium ***silver*** telluride
RL: DEV (Device component use); USES (Uses)
(bit-by-bit detection on ***super*** - ***resoln*** . ***near*** - ***field*** structure disk with ***platinum*** oxide layer)
IT 11129-89-8, ***Platinum*** oxide
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(bit-by-bit detection on ***super*** - ***resoln*** . ***near*** - ***field*** structure disk with ***platinum*** oxide layer)
IT 7440-06-4, ***Platinum*** , uses
RL: DEV (Device component use); FMU (Formation, unclassified); FORM (Formation, nonpreparative); USES (Uses)
(***particles*** ; bit-by-bit detection on ***super*** - ***resoln*** . ***near*** - ***field*** structure disk with ***platinum*** oxide layer)
RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

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(5) Kikukawa, T; Proc 14th Symp PCOS2002 (The Society of Phase Change Recording) 2002, P56
(6) Kikukawa, T; Tech Dig ISOM/ODS2002 Postdeadline Papers P45
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AN 2003:434875 CAPLUS
DN 139:14722
ED Entered STN: 06 Jun 2003
TI Optical devices having highly dispersive metallo-dielec. micropatterns
IN Polman, Albert; Strohhoefer, Christof; Van Blaaderen, Alfons
PA BTG International Limited, UK
SO PCT Int. Appl., 33 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM G03F
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 66, 76, 77
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003046657	A2	20030605	WO 2002-GB5283	20021125
	WO 2003046657	A3	20030710		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI GB 2001-28147 A 20011123
CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2003046657	ICM	G03F
	IPCI	G03F [ICM,7]
	IPCR	C03C0021-00 [I,A]; C03C0021-00 [I,C]; C03C0023-00 [I,A]; C03C0023-00 [I,C]; G02B0006-12 [N,A];

G02B0006-12 [N,C]; G02B0006-122 [I,A]; G02B0006-122 [I,C]; G02B0006-34 [N,A]; G02B0006-34 [N,C]; G02B0006-35 [N,A]; G02B0006-35 [N,C]
ECLA C03C021/00B4; C03C023/00B20; G02B006/122P

AB A method of fabricating an optical device, an electronic or magnetic device is described entailing writing refractive index modifications in SiO2 glass using a combination of ion-exchange and ***masking*** techniques, wherein the index increase in the irradiated regions of the glass is caused by the formation of ***Ag*** nanocrystals under the influence of an ion beam, wherein the index increase is highly dispersive, using self-assembled ***colloidal*** ***masks*** or lithog. defined ***masks*** to define micropatterns with pre-defined shape, size and symmetry. A multiplexer, or a demultiplexer, an optical transistor, a photonic crystal, or a dispersion compensation device using the highly dispersive metallo-dielec. micropatterns are also described. Electronic or magnetic devices (e.g., CD ROM device) including regions of nanocryst. aggregates may also be formed in a similar way.

ST dispersive micropattern optical electronic magnetic device fabrication

IT Electronic device fabrication
Semiconductor devices
(electronic devices having nanocryst. aggregates regions)

IT Nanocrystals
(electronic or magnetic devices using; optical devices having highly dispersive metallo-dielec. micropatterns and method of fabrication)

IT Ion exchange
(fabrication method; optical devices having highly dispersive metallo-dielec. micropatterns and method of fabrication)

IT Magnetic apparatus
(magnetic devices having nanocryst. aggregates regions)

IT Optical instruments
(multiplexers; optical devices having highly dispersive metallo-dielec. micropatterns and method of fabrication)

IT ***Optical*** ROM ***disks***
Optical instruments
Optical switches
Photonic crystals
(***optical*** devices having highly dispersive metallo-dielec. micropatterns and method of fabrication)

IT Transistors
(optical; optical devices having highly dispersive metallo-dielec. micropatterns and method of fabrication)

IT Silicate glasses
RL: DEV (Device component use); USES (Uses)
(substrate; optical devices having highly dispersive metallo-dielec. micropatterns and method of fabrication)

IT 7440-22-4, ***Silver*** , uses
RL: CPS (Chemical process); DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(nanocrystal, ion exchanged; optical devices having highly dispersive metallo-dielec. micropatterns and method of fabrication)

IT 7631-86-9, Silica, uses
RL: DEV (Device component use); USES (Uses)
(substrate; optical devices having highly dispersive metallo-dielec. micropatterns and method of fabrication)

L3 ANSWER 23 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:344816 CAPLUS
DN 139:221021
ED Entered STN: 07 May 2003
TI Optical transmittance study of ***silver*** ***particles*** formed by AgOx thermal decomposition
AU Shima, Takayuki; Tominaga, Junji
CS Laboratory for Advanced Optical Technology (Laotech), National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, 305-8562, Japan
SO Journal of Vacuum Science & Technology, A: Vacuum, Surfaces, and Films (2003), 21(3), 634-637
CODEN: JVTAD6; ISSN: 0734-2101
PB American Institute of Physics
DT Journal
LA English
CC 73-4 (Optical, Electron, and Mass Spectroscopy and Other Related

Properties)
Section cross-reference(s): 66

AB . ***Ag*** oxide (AgOx) thin films exhibit localized surface plasmon resonance absorption when they were heated above the decompn. temp. The resonance absorption for annealed AgO was obvious with the film thickness of 5 nm, and it became weak at 15 nm. At. force microscope images of a 15. nm film showed that various-size ***particles*** (diam. in lateral direction: 100-600 nm) are dispersed after annealing at 600.degree.. Similar optical and morphol. properties were obtained with the O compn. ratio at 33-48 at.% (i.e., Ag2O and AgO). AgOx film with .apprx.15 nm thickness is mostly used in super-resolutional ***near*** - ***field*** structure (super- ***RENS***) when combined with an ***optical*** ***disk*** for the readout of small marks beyond the diffraction limit. The results did not show, however, any evidence that the absorption properties and the readout process of super- ***RENS*** disk are well correlated.

ST ***silver*** oxide thermal decompn ***particle*** formation optical transmittance; ***particle*** formation ***silver*** oxide thermal decompn optical transmittance; UV visible spectra ***silver*** oxide ***particle*** thermal decompn; thermooptical effect ***silver*** oxide ***particle*** thermal decompn

IT Surface structure
(of ***particles*** formed by AgOx thermal decompn.)

IT Ultrathin films
(optical transmittance study of ***particles*** formed by AgOx thermal decompn. as)

IT ***Particles***
(optical transmittance study of ***silver*** ***particles*** formed by AgOx thermal decompn.)

IT Annealing
Optical transmission
Quantum size effect
Surface plasmon resonance
Thermal decomposition
Thermooptical effect
UV and visible spectra
(optical transmittance study of ***silver*** ***particles*** formed by AgOx thermal decompn. with)

IT 1301-96-8P, ***Silver*** oxide (AgO) 155645-84-4P, ***Silver*** oxide (Ag2O)
RL: PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PRP (Properties); PYP (Physical process); PREP (Preparation); PROC (Process)
(optical transmittance study of ***particles*** formed by AgOx thermal decompn.)

IT 7440-22-4P, ***Silver*** , properties
RL: PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PRP (Properties); PYP (Physical process); PREP (Preparation); PROC (Process)
(optical transmittance study of ***silver*** ***particles*** formed by AgOx thermal decompn.)

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD

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L3 ANSWER 24 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:221203 CAPLUS
DN 138:409267
ED Entered STN: 21 Mar 2003
TI Recording and readout mechanisms of ***super*** - ***resolution*** . ***near*** - ***field*** structure disc with ***silver*** -oxide layer
AU Kikukawa, Takashi; Tachibana, Akihiro; Fuji, Hiroshi; Tominaga, Junji
CS Information Technology Research Center, TDK Corporation, Nagano, 385-0009, Japan
SO Japanese Journal of Applied Physics, Part 1: Regular Papers, Short Notes & Review Papers (2003), 42(2B), 1038-1039
CODEN: JAPNDE
PB Japan Society of Applied Physics
DT Journal
LA English
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
AB The authors obsd. recorded and readout states of a ***super*** - ***resoln*** . ***near*** - ***field*** structure disk with a AgO layer by the use of a transmission electron microscope. It was confirmed that recording is caused by the explosion of AgO and that the deformation of the layers due to the explosion becomes a recorded mark. The ***Ag*** ***particles*** which irreversibly ppt. after a high' readout power irradn. are considered to be the origin of the ***super*** - ***resoln*** . readout.
ST recording readout ***super*** ***resoln*** ***near*** ***field*** disk ***silver*** oxide; ***optical*** ***disk*** super ***RENS*** ***silver*** oxide layer
IT Optical recording
(recording and readout mechanisms of ***super*** - ***resoln*** . ***near*** - ***field*** structure disk with ***silver*** -oxide layer)
IT ***Optical*** ***disks***
(super- ***RENS*** ; recording and readout mechanisms of ***super*** - ***resoln*** . ***near*** - ***field*** structure disk with ***silver*** -oxide layer)
IT 1314-98-3, Zinc sulfide, processes 7631-86-9, Silica, processes
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(dielec. layer; recording and readout mechanisms of ***super*** - ***resoln*** . ***near*** - ***field*** structure disk with ***silver*** -oxide layer)
IT 7440-22-4, ***Silver*** , processes
RL: DEV (Device component use); FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); PYP (Physical process); FORM (Formation, nonpreparative); PROC (Process); USES (Uses)
(recording and readout mechanisms of ***super*** - ***resoln*** . ***near*** - ***field*** structure disk with ***silver*** -oxide layer)
IT 1301-96-8, ***Silver*** oxide(AgO) 502762-05-2, Antimony 60.8, indium 4.5, ***silver*** 6, tellurium 28.7 (atomic)
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(recording layer; recording and readout mechanisms of ***super*** - ***resoln*** . ***near*** - ***field*** structure disk with ***silver*** -oxide layer)
RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE
(1) Fuji, H; Jpn J Appl Phys 2000, V39, P980 CAPLUS
(2) Tominaga, J; Appl Phys Lett 1998, V73, P2078 CAPLUS
(3) Tominaga, J; Jpn J Appl Phys 2001, V40, P1831 CAPLUS

L3 ANSWER 25 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:173069 CAPLUS
DN 138:195963
ED Entered STN: 07 Mar 2003
TI Optical recording method using ***optical*** recording ***medium***
IN Fujimoto, Hiroshi
PA Fuji Photo Film Co., Ltd., Japan
SO Eur. Pat. Appl., 9 pp.
CODEN: EPXXDW

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DT   Patent
LA   English
IC   ICM  G11B007-24
CC   74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other
     Reprographic Processes)
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
     ---------------     ----   --------    --------------------   --------
PI   EP 1288930           A2    20030305    EP 2002-19437          20020830
     EP 1288930           A3    20030910
     EP 1288930           B1    20050601
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
             IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK
     JP 2003077173        A2    20030314    JP 2001-263919         20010831
     JP 3681059           B2    20050810
     US 2003048700        A1    20030313    US 2002-230051         20020829
     US 6788626           B2    20040907
PRAI JP 2001-263919       A     20010831
CLASS
 PATENT NO.      CLASS  PATENT FAMILY CLASSIFICATION CODES
 --------------  -----  ----------------------------------------------------
 EP 1288930      ICM    G11B007-24
                 IPCI   G11B0007-24 [ICM,7]
                 IPCR   G11B0007-24 [I,A]; G11B0007-24 [I,C]; G11B0007-243
                        [I,A]; G11B0007-251 [I,A]
                 ECLA   G11B007/24; G11B007/243; G11B007/251
 JP 2003077173   IPCI   G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; B41M0005-26
                        [ICS,7]; G11B0007-0045 [ICS,7]; G11B0007-26 [ICS,7]
 US 2003048700   IPCI   G11B0011-00 [ICM,7]
                 IPCR   G11B0007-24 [I,A]; G11B0007-24 [I,C]; G11B0007-243
                        [I,A]; G11B0007-251 [I,A]
                 NCL    369/013.380
                 ECLA   G11B007/24; G11B007/243; G11B007/251
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AB   An optical recording method comprises making a recording with ***near*** ***field*** light on an ***optical*** recording ***medium*** comprising a substrate having provided on it a ***particle*** layer contg. ***particles*** having an av. ***particle*** size ranging 1-50 nm.

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ST     ***optical***   recording   ***medium***   telluride glass
IT   Optical recording
        (optical recording method using   ***optical***   recording
          ***medium***  )
IT   Telluride glasses
     RL: DEV (Device component use); USES (Uses)
        (optical recording method using   ***optical***   recording
          ***medium***  )
IT   7440-56-4, Germanium, uses
     RL: DEV (Device component use); USES (Uses)
        (Antimony Germanium Telluride glass;   ***optical***   recording
          ***medium***   contg.)
IT   7440-22-4,   ***Silver***  , uses   7440-36-0, Antimony, uses   7440-74-6,
     Indium, uses   13494-80-9, Tellurium, uses
     RL: DEV (Device component use); USES (Uses)
        (Antimony Indium   ***Silver***   Telluride glass;   ***optical***
        recording   ***medium***   contg.)
IT   127860-51-9P, Antimony Germanium Telluride   149087-96-7P, Antimony Indium
       ***Silver***   Telluride
     RL: DEV (Device component use); PNU (Preparation, unclassified); PREP
     (Preparation); USES (Uses)
        (  ***optical***   recording   ***medium***   contg.)
IT   7761-88-8,   ***Silver***   nitrate, reactions   12737-02-9, Antimony
     acetate   25114-58-3, Indium acetate
     RL: RCT (Reactant); RACT (Reactant or reagent)
        (prepn. of   ***optical***   recording   ***medium***   for
          ***optical***   recording method)
IT   9003-39-8, Polyvinyl pyrrolidone
     RL: TEM (Technical or engineered material use); USES (Uses)
        (prepn. of   ***optical***   recording   ***medium***   for
          ***optical***   recording method)
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AN   2002:954160 CAPLUS

DN 138:262594
ED Entered STN: 17 Dec 2002
TI Rigid bubble pit formation and huge signal enhancement in ***super*** - ***resolution*** ***near*** - ***field*** structure disk with ***platinum*** oxide layer
AU Kikukawa, T.; Nakano, T.; Shima, T.; Tominaga, J.
CS TDK Corporation, Information Technology Research Center, Saku, Nagano, 385-0009, Japan
SO Applied Physics Letters (2002), 81(25), 4697-4699
CODEN: APPLAB; ISSN: 0003-6951
PB American Institute of Physics
DT Journal
LA English
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
AB Huge signal enhancement was obsd. by a ***super*** - ***resoln*** . ***near*** - ***field*** structure disk with a ***platinum*** -oxide layer. The carrier-to-noise ratio of 200-nm-mark trains reached 46.1 dB, and 42.3 dB was obtained even at 150-nm-mark trains. The sizes of the marks were one-fifth to one-seventh of the laser spot diam. of the readout system. The cross section of the mark trains was also obsd. by transmission electron microscopy. It was confirmed that 200-nm-size bubble pits were rigidly formed in good sepn. and .apprx.20-nm- ***platinum*** ***particles*** pptd. inside the bubble. The computer-simulation based on the model supported the huge signal enhancement.
ST bubble pit formation ***super*** ***resoln*** ***near*** ***field*** structure disk; ***platinum*** oxide super REN ***optical*** ***disk*** bubble pit formation
IT Metallic glasses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(antimony indium ***silver*** telluride; rigid bubble pit formation and huge signal enhancement in ***super*** - ***resoln*** . ***near*** - ***field*** structure disk with ***platinum*** oxide layer)
IT Optical recording
(rigid bubble pit formation and huge signal enhancement in ***super*** - ***resoln*** . ***near*** - ***field*** structure disk with ***platinum*** oxide layer)
IT ***Optical*** ***disks***
(***super*** - ***resoln*** . ***near*** - ***field*** ; rigid bubble pit formation and huge signal enhancement in ***super*** - ***resoln*** . ***near*** - ***field*** structure disk with ***platinum*** -oxide layer)
IT 7440-22-4, ***Silver*** , processes 7440-36-0, Antimony, processes 7440-74-6, Indium, processes 13494-80-9, Tellurium, processes
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(antimony indium ***silver*** telluride; rigid bubble pit formation and huge signal enhancement in ***super*** - ***resoln*** . ***near*** - ***field*** structure disk with ***platinum*** oxide layer)
IT 7440-06-4, ***Platinum*** , processes
RL: DEV (Device component use); FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); PYP (Physical process); FORM (Formation, nonpreparative); PROC (Process); USES (Uses)
(rigid bubble pit formation and huge signal enhancement in ***super*** - ***resoln*** . ***near*** - ***field*** structure disk with ***platinum*** oxide layer)
IT 1314-98-3, Zinc sulfide, processes 7631-86-9, Silica, processes 502762-05-2
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(rigid bubble pit formation and huge signal enhancement in ***super*** - ***resoln*** . ***near*** - ***field*** structure disk with ***platinum*** oxide layer)
IT 1314-15-4, ***Platinum*** dioxide
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(rigid bubble pit formation and huge signal enhancement in ***super*** - ***resoln*** . ***near*** - ***field***

structure disk with ***platinum*** -oxide layer)
RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD
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(15) Tominaga, J; Appl Phys Lett 1998, V73, P2078 CAPLUS
(16) Tominaga, J; Jpn J Appl Phys, Part 1 2001, V40, P1831 CAPLUS
(17) Yoshikawa, H; Appl Opt 1999, V38, P863

L3 ANSWER 27 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2002:363680 CAPLUS
DN 136:377359
ED Entered STN: 16 May 2002
TI Investigations of sputtered ***silver*** oxide deposits for the super- ***RENS*** high density optical data storage application
AU Buechel, Dorothea; Mihalcea, Christophe; Fukaya, Toshio; Atoda, Nobufumi; Tominaga, Junji
CS Laboratory for Advanced Optical Technology (LAOTEC), National Institute of Advanced Industrial Science and Technology (AIST), 1-1-1 Higashi, Tsukuba-city, Ibaraki, 305-8562, Japan
SO Materials Research Society Symposium Proceedings (2001), 674(Applications of Ferromagnetic and Optical Materials, Storage and Magnetoelectronics), V3.2.1-V3.2.6
CODEN: MRSPDH; ISSN: 0272-9172
PB Materials Research Society
DT Journal
LA English
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
AB Thin ***silver*** oxide films used as ***mask*** layers in ***super*** - ***Resoln*** . Nearfield Structure (***super*** - ***RENS***) ***disks*** for high d. ***optical*** data storage were reactively sputter-deposited and their compn. was detd. by spectroscopic means. It was found that the stoichiometry of the films changed with the oxygen content in the sputtering gas atm. With a stepwise increase in the percentage of O2 from 0-100%, the corresponding layers consist of ***Ag*** , mixts. of ***Ag*** and Ag2O, Ag2O, mixts. of Ag2O and AgO and AgO. Laser activation of such oxidic phase contg. deposits results in the decompn. of the material and excitation of strong local plasmons in the remaining ***silver*** clusters. This was confirmed by acquiring surface enhanced Raman spectra (SERS) of benzoic acid (BA), ***copper*** phthalocyanine (CP) and internal carbon impurities on ***silver*** oxide substrates. From this data, it was concluded that the sub-wavelength ***resoln*** . obtained in ***super*** - ***RENS*** disks is mediated by local surface plasmons on small ***silver*** ***particles*** forming in the ***mask*** layer.
ST ***superresoln*** nearfield structure optical data storage ***silver*** oxide
IT ***Optical*** ***disks***
Raman spectra
Sputtering
Surface plasmon
(investigations of sputtered ***silver*** oxide deposits for ***super*** - ***resoln*** . nearfield structure high d. optical data storage application)
IT 65-85-0, Benzoic acid, properties 147-14-8, ***Copper*** phthalocyanine
RL: NUU (Other use, unclassified); PRP (Properties); USES (Uses)
(investigations of sputtered ***silver*** oxide deposits for

super - ***resoln*** . nearfield structure high d. optical
data storage application)
IT 1301-96-8P, ***Silver*** oxide (AgO) 20667-12-3P, ***Silver***
oxide
RL: PNU (Preparation, unclassified); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(investigations of sputtered ***silver*** oxide deposits for
super - ***resoln*** . nearfield structure high d. optical
data storage application)
IT 7440-22-4, ***Silver*** , properties
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(investigations of sputtered ***silver*** oxide deposits for
super - ***resoln*** . nearfield structure high d. optical
data storage application)
RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

(1) Buchel, D; J Magn Soc Japan 2001, V25(3-2), P240 CAPLUS
(2) Creighton, J; J Chem Soc Faraday Trans 1979, V2(75), P790
(3) Fleischmann, M; Chem Phys Lett 1974, V26, P163 CAPLUS
(4) Fuji, H; Jpn J Appl Phys 2000, V39(I, 2B), P980
(5) Hamilton, J; J Electrochem Soc 1986, V133(4), P739 CAPLUS
(6) Kim, J; Appl Phys Lett 2000, V77, P1774 CAPLUS
(7) Moskowits, M; Rev Mod Phys 1985, V57(3-1), P783
(8) Moyer, P; J Am Chem Soc 2000, V122, P5409 CAPLUS
(9) Schmidt, A; Thin Solid Films 1996, V281-282, P105 CAPLUS
(10) Tominaga, J; Appl Phys Lett, in press 2001, V78 CAPLUS
(11) Tsang, J; Chem Phys Lett 1980, V76(1), P54 CAPLUS

L3 ANSWER 28 OF 61 CAPLUS
AN 2002:349326 CAPLUS
DN 136:348376
ED Entered STN: 10 May 2002
TI Rewritable ***optical*** recording ***medium*** using ***near***
- ***field*** light
IN Nomura, Akihiko; Kondo, Tetsuya
PA Victor Co. of Japan, Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G11B007-24
ICS G11B007-24
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002133720	A2	20020510	JP 2000-331396	20001030
PRAI	JP 2000-331396		20001030		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2002133720	ICM	G11B007-24
	ICS	G11B007-24
	IPCI	G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]

AB The medium comprises a transparent substrate successively laminated with a dielec. film, a crystal-amorphous reversibly changable recording film, another dielec. film, a dielec. reflective film contg. dispersed metal fine ***particles*** , and protective film. The medium shows improved high-d. recording property.

ST ***optical*** recording ***disk*** rewritable ***near***
field light; metal ***particle*** dispersion reflection film
optical ***disk***
IT ***Optical*** ***disks***
(rewritable ***optical*** recording ***medium*** using
near - ***field*** light)
IT 7429-90-5, Aluminum, uses 7440-22-4, ***Silver*** , uses 7440-57-5,
Gold , uses
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(fine ***particles*** , reflective layer contg.; rewritable

optical recording ***medium*** using ***near*** - ***field*** light)

IT 1314-98-3, Zinc sulfide, uses 1344-28-1, Alumina, uses 7631-86-9, Silica, uses 12033-89-5, Silicon nitride, uses
RL: DEV (Device component use); USES (Uses)
(reflective layer; rewritable ***optical*** recording ***medium*** using ***near*** - ***field*** light)

L3 ANSWER 29 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2002:325279 CAPLUS
DN 137:13178
ED Entered STN: 01 May 2002
TI ***Super*** - ***resolution*** read-only memory disk with metal nanoparticles or small aperture
AU Nomura, Akihiko; Otshi, Kenji; Kikukawa, Takashi; Fuji, Hiroshi; Tominaga, Junji
CS Technology Development Division, Victor Company of Japan Ltd., Yokosuka, Kanagawa, 239-8550, Japan
SO Japanese Journal of Applied Physics, Part 1: Regular Papers, Short Notes & Review Papers (2002), 41(3B), 1876-1879
CODEN: JAPNDE
PB Japan Society of Applied Physics
DT Journal
LA English
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
AB The authors attempted to increase the signal intensity of small pits the sizes of which were smaller than the optical diffraction limit in read-only memory (ROM) disks. For this purpose the authors employed a granular film and a thermochromic film in their study. The reason for using these films was to apply the ***super*** - ***resoln*** . ***near*** - ***field*** structure (***super*** - ***RENS***) model, which suggests that the signal intensity of very small marks is increased by metal nanoparticles or a small aperture in the disk, to super-ROM. The authors investigated the effect of adjoining these films to a reflective layer on readout signals. It was found that the signal intensity of very small pits was increased by both of these films, but the mechanisms of increase were different.
ST ***superresoln*** read only memory disk ***RENS*** structure model; super ROM ***optical*** ***disk*** ***RENS*** structure model; metal nanoparticle super ROM ***optical*** ***disk*** ; thermochromic film aperture metal nanoparticle thermochromic film aperture
IT Nanoparticles
Thermochromic materials
(application of super- ***RENS*** structure model to super-ROM disk using granular film contg. ***Ag*** ***particles*** or thermochromic film with small apertures)
IT Polycarbonates, uses
RL: DEV (Device component use); USES (Uses)
(substrate; application of super- ***RENS*** structure model to super-ROM disk using granular film contg. ***Ag*** ***particles*** or thermochromic film with small apertures)
IT ***Optical*** ROM ***disks***
(***super*** -; ***super*** - ***resoln*** . read-only memory disk with metal nanoparticles or small aperture)
IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses
RL: DEV (Device component use); USES (Uses)
(dielec. layer; application of super- ***RENS*** structure model to super-ROM disk using granular film contg. ***Ag*** ***particles*** or thermochromic film with small apertures)
IT 7440-22-4, ***Silver*** , uses
RL: DEV (Device component use); USES (Uses)
(nanoparticles; application of super- ***RENS*** structure model to super-ROM disk using granular film contg. ***Ag*** ***particles*** or thermochromic film with small apertures)
IT 7440-21-3, Silicon, uses
RL: DEV (Device component use); USES (Uses)
(reflective layer; application of super- ***RENS*** structure model to super-ROM disk using granular film contg. ***Ag*** ***particles*** or thermochromic film with small apertures)
RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

(1) Hatakeyama, M; Jpn J Appl Phys 2000, V39, P752 CAPLUS
(2) Kikukawa, T; Jpn J Appl Phys 2001, V40, P1624 CAPLUS
(3) Tominaga, J; Appl Phys Lett 1998, V73, P2078 CAPLUS
(4) Tominaga, J; Jpn J Appl Phys 2000, V39, P957 CAPLUS

L3 ANSWER 30 OF 61 CAPLUS
AN 2002:39635 CAPLUS
DN 136:126622
ED Entered STN: 16 Jan 2002
TI ***Optical*** ***disk*** provided with ***super*** - ***resolution*** film and recording/reproducing method thereof
IN Ichihara, Katsutaro; Nagase, Toshihiko
PA Kabushiki Kaisha Toshiba, Japan
SO U.S., 13 pp.
CODEN: USXXAM
DT Patent
LA English
IC ICM G11B007-00
INCL 369275200
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73, 76
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6339582	B1	20020115	US 1999-272777	19990319
PRAI	JP 1998-71691	A	19980320		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 6339582	ICM	G11B007-00
	INCL	369275200
	IPCI	G11B0007-00 [ICM,7]
	IPCR	G11B0007-00 [I,C]; G11B0007-0045 [I,A]; G11B0007-005 [I,A]; G11B0007-24 [I,A]; G11B0007-24 [I,C]; G11B0007-257 [I,A]
	NCL	369/275.200; 369/013.050; 369/118.000; 428/064.100
	ECLA	G11B007/0045R; G11B007/005R; G11B007/24; G11B007/24R; G11B007/257

AB The invention relates to an ***optical*** ***disk*** on and from which information is recorded and reproduced by irradiating a light beam. The ***optical*** ***disk*** is capable of ***super*** - ***resoln*** . recording by forming a recording mark smaller than the spot size of a recording beam defined by the wavelength of a light source and the NA of a focusing lens. The ***optical*** ***disk*** has a recording layer to which light is irradiated for recording/reproducing information, and comprises a ***super*** - ***resoln*** . film for recording, and a reflective film, that are formed on the side opposite to the light- entering side with respect to the recording layer, and a ***super*** - ***resoln*** . film for reprodn. formed on the light- entering side with respect to the recording layer.
ST ***optical*** ***disk*** recording ***medium*** semiconductor cadmium sulfide gallium telluride; antimony germanium telluride zinc sulfide silica aluminum ***optical*** ***disk*** ; indium ***silver*** sulfide chalcogenide semiconductor ***particle*** DVD RAM disk
IT Semiconductor materials
(in manuf. of ***optical*** ***disk*** with improved carrier-to-noise ratio and having ***super*** - ***resoln*** . film contg. semiconductor ***particles***)
IT ***Optical*** ***disks***
(***optical*** ***disk*** having ***super*** - ***resoln*** . film contg. semiconductor ***particles***)
IT Magnetron sputtering
(***optical*** ***disk*** with improved carrier-to-noise ratio and having ***super*** - ***resoln*** . film contg. semiconductor ***particles*** formed by)
IT 409-21-2, Silicon carbide (SiC), uses 1306-23-6, Cadmium sulfide (CdS), uses 1306-24-7, Cadmium selenide (CdSe), uses 1306-25-8, Cadmium telluride (CdTe), uses 1315-09-9, Zinc selenide (ZnSe) 1317-36-8, Lead oxide (PbO), uses 1317-38-0, ***Copper*** oxide (CuO), uses 12013-55-7, Calcium silicide (CaSi) 12024-10-1, Gallium sulfide (GaS)

12024-11-2, Gallium selenide (GaSe) 12024-14-5, Gallium telluride (GaTe) 12025-32-0, Germanium sulfide (GeS) 12067-17-3 12136-26-4, Indium oxide (InO) 20859-73-8, Aluminum phosphide (AlP) 25152-52-7 389805-86-1, Indium ***silver*** sulfide (InAgS) 389805-87-2, Cadmium germanium phosphide (CdGeP) 389805-89-4, Indium ***silver*** silicide (InAgSi) 389805-90-7, Antimony ***silver*** sulfide (SbAgS) 389805-91-8, Aluminum ***copper*** sulfide (AlCuS)
RL: TEM (Technical or engineered material use); USES (Uses)
(***optical*** ***disk*** having ***super*** - ***resoln*** . film contg. semiconductor ***particles***)

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Anon; JP 05225611 1993
(2) Anon; JP 772567 1995
(3) Asai; US 5474874 A 1995
(4) Ichihara; US 6181650 B1 2001 CAPLUS
(5) Ichihara; US 6187406 B1 2001
(6) Kawanishi; US 5591500 A 1997
(7) Miyake; US 6111822 A 2000 CAPLUS
(8) Nishimura; US 5717662 A 1998
(9) Spruit; US 5153873 A 1992

L3 ANSWER 31 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:729883 CAPLUS
DN 135:280613
ED Entered STN: 05 Oct 2001
TI ***Optical*** ***disk*** having ***super*** - ***resolution*** film comprising semiconductor ***particles*** dispersed in polymer matrix
IN Todori, Kenji; Nagase, Toshihiko; Ichihara, Katsutaro; Kihara, Naoko
PA K. K. Toshiba, Japan
SO Eur. Pat. Appl., 32 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM G02F001-355
ICS G02F001-361; G11B007-24
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1139161	A1	20011004	EP 2001-302981	20010329
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2001273681	A2	20011005	JP 2000-92160	20000329
	TW 501124	B	20020901	TW 2001-90106379	20010319
	US 2001038900	A1	20011108	US 2001-819621	20010329
PRAI	JP 2000-92160	A	20000329		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 1139161	ICM	G02F001-355
	ICS	G02F001-361; G11B007-24
	IPCI	G02F0001-355 [ICM,6]; G02F0001-361 [ICS,6]; G11B0007-24 [ICS,6]
	IPCR	G02F0001-35 [I,C]; G02F0001-355 [I,A]; G11B0007-24 [I,A]; G11B0007-24 [I,C]; G11B0007-243 [I,A]; G11B0007-247 [I,A]; G11B0007-251 [I,A]; G11B0007-257 [I,A]
	ECLA	G02F001/355Q; G11B007/24R; G11B007/243; G11B007/247; G11B007/251; G11B007/257
JP 2001273681	IPCI	G11B0007-24 [ICM,7]
TW 501124	IPCI	G11B0007-24 [ICM,7]
US 2001038900	IPCI	B32B0003-02 [ICM,7]; G11B0007-26 [ICS,7]; G11B0005-84 [ICS,7]; G11B0003-70 [ICS,7]
	IPCR	G02F0001-35 [I,C]; G02F0001-355 [I,A]; G11B0007-24 [I,A]; G11B0007-24 [I,C]; G11B0007-243 [I,A]; G11B0007-247 [I,A]; G11B0007-251 [I,A]; G11B0007-257 [I,A]
	NCL	428/064.400
	ECLA	G02F001/355Q; G11B007/24R; G11B007/243; G11B007/247;

G11B007/251; G11B007/257

AB An ***optical*** ***disk*** from which recorded data are read out by means of light irradn. has a substrate having recording pits as data on a surface, and stacked films formed on the substrate. The stacked films contain a ***super*** - ***resoln*** . film of a polymer matrix and semiconductor ***particles*** having an org. group covalently bonded thereto, and a reflective film. The ***super*** - ***resoln*** . film and the reflective film are provided in this order from a light incident side. The object of the present invention is to further improve the ***super*** - ***resoln*** . characteristics in a ***super*** - ***resoln*** . film using semiconductor ***particles*** so as to increase the recording d. of an ***optical*** ***disk*** .

ST ***optical*** ***disk*** ***superresoln*** film semiconductor ***particle*** polymer matrix; DVD CDR semiconductor ***particle*** polymer matrix ***superresoln*** film

IT ***Optical*** ***disks***
(***optical*** ***disk*** having ***super*** - ***resoln*** . film comprising semiconductor ***particles*** dispersed in polymer matrix partially bonded covalently to semiconductor ***particles***)

IT 163442-67-9, Starburst 4th Generation
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(dendritic; ***optical*** ***disk*** having ***super*** - ***resoln*** . film comprising semiconductor ***particles*** dispersed in polymer matrix partially bonded covalently to semiconductor ***particles***)

IT 3385-94-2, Bis(trimethylsilyl) sulfide 4099-46-1, Bis(trimethylsilyl) selenide
RL: NUU (Other use, unclassified); USES (Uses)
(***optical*** ***disk*** having ***super*** - ***resoln*** . film comprising semiconductor ***particles*** dispersed in polymer matrix partially bonded covalently to semiconductor ***particles***)

IT 919-30-2, Aminopropyltriethoxy-silane 1306-24-7, Cadmium selenide, processes 1306-25-8, Cadmium telluride, processes 1314-98-3, Zinc sulfide, processes 7758-89-6, ***Copper*** chloride 9011-14-7, Polymethyl methacrylate 112074-07-4, Cadmium selenide sulfide ($CdSe_{0.4}S_{0.6}$) 117727-56-7, Cadmium selenide sulfide ($CdSe_{0.9}S_{0.1}$) 163442-71-5D, Starburst 8th Generation, hydroxy terminated
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(***optical*** ***disk*** having ***super*** - ***resoln*** . film comprising semiconductor ***particles*** dispersed in polymer matrix partially bonded covalently to semiconductor ***particles***)

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Anon; PATENT ABSTRACTS OF JAPAN 1994, V018(278), PP-1743
(2) Hitachi Ltd; EP 0316909 A 1989 CAPLUS
(3) Hitachi Maxell Ltd; JP 06044609 A 1994
(4) Ibm; EP 0431973 A 1991 CAPLUS
(5) Nakamura, S; US 5824240 A 1998
(6) Nosaka, Y; JOURNAL OF APPLIED POLYMER SCIENCE 1993, V47(10), P1773 CAPLUS
(7) Pioneer Electronic Corp; EP 0580346 A 1994 CAPLUS

L3 ANSWER 32 OF 61 CAPLUS
AN 2001:559617 CAPLUS
DN 135:129632
ED Entered STN: 03 Aug 2001
TI Recording ***medium*** , ***near*** ***field*** ***optical*** head, optical recording device, and method of manufacturing thereof
IN Oumi, Manabu; Kasama, Nobuyuki; Maeda, Hidetaka; Kato, Kenji; Niwa, Takashi; Mitsuoka, Yasuyuki; Shinohara, Yoko
PA Seiko Instruments Inc., Japan
SO Eur. Pat. Appl., 18 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM G11B007-24
ICS G11B007-26; G11B007-12; G11B007-22
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other

Reprographic Processes)
Section cross-reference(s): 47, 73

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1120780	A2	20010801	EP 2001-300702	20010126
	EP 1120780	A3	20030409		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2001283466	A2	20011012	JP 2001-1677	20010109
	US 2001030938	A1	20011018	US 2001-770072	20010125
	US 6697322	B2	20040224		
	US 2004086808	A1	20040506	US 2003-691772	20031023
PRAI	JP 2000-17557	A	20000126		
	JP 2001-1677	A	20010109		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
EP 1120780	ICM	G11B007-24
	ICS	G11B007-26; G11B007-12; G11B007-22
	IPCI	G11B0007-24 [ICM,6]; G11B0007-26 [ICS,6]; G11B0007-12 [ICS,6]; G11B0007-22 [ICS,6]
	IPCR	G11B0007-12 [I,A]; G11B0007-12 [I,C]; G11B0007-125 [I,A]; G11B0007-125 [I,C]; G11B0007-22 [I,A]; G11B0007-22 [I,C]; G11B0007-24 [I,A]; G11B0007-24 [I,C]; G11B0007-26 [I,A]; G11B0007-26 [I,C]
	ECLA	G11B007/12F; G11B007/125D; G11B007/22; G11B007/24; G11B007/26
JP 2001283466	IPCI	G11B0007-24 [ICM,7]; G11B0007-24 [ICS,7]; G01N0013-10 [ICS,7]; G01N0013-14 [ICS,7]; G11B0007-12 [ICS,7]; G11B0007-22 [ICS,7]; G11B0007-26 [ICS,7]; G12B0021-06 [ICS,7]
US 2001030938	IPCI	G11B0007-24 [ICM,7]; G11B0007-00 [ICS,7]; G11B0015-64 [ICS,7]; G11B0017-32 [ICS,7]
	IPCR	G11B0007-12 [I,A]; G11B0007-12 [I,C]; G11B0007-125 [I,A]; G11B0007-125 [I,C]; G11B0007-22 [I,A]; G11B0007-22 [I,C]; G11B0007-24 [I,A]; G11B0007-24 [I,C]; G11B0007-26 [I,A]; G11B0007-26 [I,C]
	NCL	369/300.000
	ECLA	G11B007/12F; G11B007/22; G11B007/24; G11B007/26; G11B007/125D
US 2004086808	IPCI	G03C0005-00 [ICM,7]
	IPCR	G11B0007-12 [I,A]; G11B0007-12 [I,C]; G11B0007-125 [I,A]; G11B0007-125 [I,C]; G11B0007-22 [I,A]; G11B0007-22 [I,C]; G11B0007-24 [I,A]; G11B0007-24 [I,C]; G11B0007-26 [I,A]; G11B0007-26 [I,C]
	NCL	430/321.000
	ECLA	G11B007/12F; G11B007/125D; G11B007/22; G11B007/24; G11B007/26

AB The invention relates to a recording ***medium*** , ***near*** - ***field*** ***optical*** head, an optical recording device capable of utilizing ***near*** - ***field*** light to record and reproduce information in a highly precise manner. The invention provides an information recording/reprodn. device for implementing high d. ***information*** recording ***medium*** with ***near*** - ***field*** light, and ***particularly*** to a ***near*** - ***field*** optical head with high optical efficiency and a manufg. method for it. This is achieved by enabling an energy propagation mechanism via plasmon by forming a layer dispersed with metal ***particulate*** at a microscopic opening generating ***near*** - ***field*** light, and therefore, increase optical efficiency.

ST recording field optical head video device ***silver***

IT Recording apparatus
(recording ***medium*** comprising ***near*** - ***field*** ***optical*** head contg. silica film scattered with ***silver*** ***particles***)

IT ***Optical*** memory devices
Surface plasmon
(recording ***medium*** comprising ***near*** - ***field*** ***optical*** head contg. silica layer scattered with ***silver*** ***particles***)

IT 7440-22-4P, ***Silver*** , preparation 7631-86-9P, Silica,

preparation
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(recording ***medium*** comprising ***near*** - ***field*** ***optical*** head contg. silica layer scattered with ***silver*** ***particles***)

L3 ANSWER 33 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:360299 CAPLUS
DN 134:346532
ED Entered STN: 18 May 2001
TI ***Near*** - ***field*** crystal optical memory
IN Moscovitch, Marko
PA Georgetown University, USA
SO PCT Int. Appl., 21 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM G11B007-00
ICS G11B007-24; C09K011-00
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001035398	A1	20010517	WO 2000-US30802	20001110

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	AU 2001015922	A5	20010606	AU 2001-15922	20001110
	US 2002167887	A1	20021114	US 2002-143497	20020510
PRAI	US 1999-164574P	P	19991110		
	WO 2000-US30802	W	20001110		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2001035398	ICM	G11B007-00
	ICS	G11B007-24; C09K011-00
	IPCI	G11B0007-00 [ICM,7]; G11B0007-24 [ICS,7]; C09K0011-00 [ICS,7]
	IPCR	C09K0011-65 [I,A]; C09K0011-65 [I,C]; G11B0007-00 [I,C]; G11B0007-0045 [I,A]; G11B0007-005 [I,A]; G11B0007-24 [I,C]; G11B0007-243 [I,A]
	ECLA	C09K011/65D; G11B007/0045; G11B007/005; G11B007/243
AU 2001015922	IPCI	G11B0007-00 [ICM,7]; G11B0007-24 [ICS,7]; C09K0011-00 [ICS,7]
US 2002167887	IPCI	G11B0007-00 [ICM,7]
	IPCR	G11B0007-00 [I,C]; G11B0007-0045 [I,A]; G11B0007-005 [I,A]; G11B0007-24 [I,A]; G11B0007-24 [I,C]; G11B0007-243 [I,A]
	NCL	369/121.000
	ECLA	G11B007/0045; G11B007/005; G11B007/24; G11B007/243

AB An optical data storage system, ***particularly*** suited for use in the information and entertainment industries. A ***near*** - ***field*** crystal optical memory (NCOM) system includes an electron trapping media, ***particularly*** an .alpha.-Al2O3:C crystal or ***Cu*** +-doped fused quartz, that is sensitive to light. Information is stored and retrieved using blue and green laser light, resp. High data d. is achieved using a ***near*** - ***field*** scanning optical microscopy (NSOM) technique, by placing the optical probe in a very close proximity to the crystal surface. The storage system enables ultra-high data densities reaching 2500 Gb/in2.
ST ***near*** ***field*** crystal optical memory microscopy; ***optical*** ***disk*** electron trapping material
IT Microscopy

(***near*** - ***field*** ; reading and writing ***near*** - ***field*** crystal optical memory)
IT ***Optical*** ***disks***
(writing ***near*** - ***field*** crystal optical memory)
IT 7440-44-0, Carbon, uses 17493-86-6, ***Copper*** ion(1+), uses
RL: NUU (Other use, unclassified); USES (Uses)
(dopant; electron trapping material in recording medium of ***near*** - ***field*** crystal optical memory doped with)
IT 14808-60-7, Quartz, uses
RL: DEV (Device component use); USES (Uses)
(doped with ***Copper*** (I) ion; electron trapping material in recording medium of ***near*** - ***field*** crystal optical memory)
IT 1344-28-1, .alpha.-Alumina, uses
RL: DEV (Device component use); USES (Uses)
(doped with carbon; electron trapping material in recording medium of ***near*** - ***field*** crystal optical memory)
RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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(3) Geyer, F; US 4561086 A 1985
(4) Ibm; EP 0129730 A 1985
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(6) Justus, B; SOLID STATE DOSIMETRY 12TH INTERNATIONAL CONFERENCE 1999, V84(1-4), P189 CAPLUS
(7) Lindmayer, J; US 5142493 A 1992
(8) Vo-Dinh, T; US 5325342 A 1994

L3 ANSWER 34 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:302116 CAPLUS
DN 135:99756
ED Entered STN: 29 Apr 2001
TI ***Near*** - ***field*** optical simulation of ***super*** - ***resolution*** ***near*** - ***field*** structure disks
AU Nakano, Takashi; Yamakawa, Yuzo; Tominaga, Junji; Atoda, Nobufumi
CS Advanced Optical Memory Group, National Institute for Advanced Interdisciplinary Research (NAIR), Tsukuba, 305-8562, Japan
SO Japanese Journal of Applied Physics, Part 1: Regular Papers, Short Notes & Review Papers (2001), 40(3B), 1531-1535
CODEN: JAPNDE; ISSN: 0021-4922
PB Japan Society of Applied Physics
DT Journal
LA English
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73
AB The authors describe the optical properties of readout signals from light-scatting-center ***super*** - ***resoln*** . ***near*** - ***field*** structure disks by a numerical simulation using a 3-dimensional finite-difference time-domain method (FDTD). Since the generation process of the ***near*** - ***field*** readout signals has a relation between the direction of the mark train and the polarization direction of incident light, the optical properties of readout ***near*** - ***field*** signals strongly depended on the incident light polarization. The land and groove structure, and the scattering center size also influenced the readout signals.
ST ***disk*** ***optical*** ***near*** ***field*** ***super*** ***resoln*** polarized laser radiation; zinc sulfide ***optical*** ***disk*** ***near*** ***field*** ***super*** ***resoln*** polarized; ***silver*** oxide ***optical*** ***disk*** ***near*** ***field*** ***super*** ***resoln*** polarized; silica ***optical*** ***disk*** ***near*** ***field*** ***super*** ***resoln*** polarized; polycarbonate ***optical*** ***disk*** ***near*** ***field*** ***super*** ***resoln*** polarized; plasmon ***optical*** ***disk*** ***near*** ***field*** ***super*** ***resoln*** polarized; antimony germanium telluride ***optical*** ***disk*** ***near*** ***field*** ***super*** ***resoln***
IT Laser radiation scattering
Plasmon

Polarized laser radiation
(***near*** - ***field*** optical simulation of ***super*** - ***resoln*** . ***near*** - ***field*** structure disks)
IT Polycarbonates, properties
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(***near*** - ***field*** optical simulation of ***super*** - ***resoln*** . ***near*** - ***field*** structure disks)
IT ***Optical*** ***disks***
(***super*** - ***resoln*** . ***near*** - ***field*** ; ***near*** - ***field*** optical simulation of ***super*** - ***resoln*** . ***near*** - ***field*** structure disks)
IT 1314-98-3, Zinc monosulfide, properties 7631-86-9, Silica, properties 16150-49-5, antimony germanium telluride sb2ge2te5 20667-12-3, ***Silver*** oxide
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(***near*** - ***field*** optical simulation of ***super*** - ***resoln*** . ***near*** - ***field*** structure disks)
IT 7440-22-4, ***Silver*** , properties
RL: DEV (Device component use); MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(***particle*** ; ***near*** - ***field*** optical simulation of ***super*** - ***resoln*** . ***near*** - ***field*** structure disks)
RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

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(2) Fuji, H; Jpn J Appl Phys 2000, V39, P980 CAPLUS
(3) Furukawa, H; Opt Commun 1996, V132, P170 CAPLUS
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(6) Martin, Y; Appl Phys Lett 1997, V71, P1 CAPLUS
(7) Milster, T; Opt Lett 1999, V24, P605
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(11) Tominaga, J; Appl Phys Lett 1998, V73, P2078 CAPLUS
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(13) Yoshikawa, H; Opt Lett 2000, V25, P67

L3 ANSWER 35 OF 61 CAPLUS
AN 2000:858123 CAPLUS
DN 134:170759
ED Entered STN: 07 Dec 2000
TI Light-scattering-mode ***super*** - ***resolution*** ***near*** - ***field*** structure (***super*** - ***RENS***) for super-density data storage

AU Tominaga, J.; Fuji, H.; Nakano, T.; Men, L.; Atoda, N.
CS Advanced Optical Memory Group, National Institute for Advanced Interdisciplinary, Tsukuba, 305-8562, Japan

SO Near-Field Optics: Principles and Applications, Asia-Pacific Workshop on Near Field Optics, 2nd, Beijing, China, Oct. 20-23, 1999 (2000), Meeting Date 1999, 240-245. Editor(s): Zhu, Xing; Ohtsu, Motoichi. Publisher: World Scientific Publishing Co. Pte. Ltd., Singapore, Singapore.
CODEN: 69ARLV
DT Conference
LA English

CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

AB A light-scattering-mode ***super*** - ***resoln*** . ***near*** - ***field*** structure (***super*** - ***RENS***) is proposed by using a ***silver*** oxide layer instead of an Sb layer. The ***silver*** oxide layer, which was produced by r.f. reactive sputtering with a ***Ag*** target and the gas mixt. of Ar and oxygen, showed a reversible chem. reaction (2Ag2O .dblharw. 4Ag + O2) to increase the reflection. The decompd. ***Ag*** ***particles*** worked as light scattering centers like a aperture-less NSOM. The authors could record and retrieve small marks until 100 nm size at more than the double speed of a super- ***RENS*** disk using an Sb layer.

ST light scattering ***super*** ***resoln*** ***near*** ***field*** structure data storage; ***silver*** oxide ***optical*** recording ***disk*** super ***RENS*** structure
IT ***Optical*** ***disks***

(light-scattering-mode ***super*** - ***resoln*** . ***near*** - ***field*** structure ***optical*** ***disk*** using chem. reaction of Ag2O layer)
IT 1314-98-3, Zinc sulfide, uses 7631-86-9, Silica, uses
RL: DEV (Device component use); USES (Uses)
(dielec. layer; light-scattering-mode ***super*** - ***resoln*** . ***near*** - ***field*** structure ***optical*** ***disk*** using chem. reaction of Ag2O layer)
IT 16150-49-5, Germanium antimony telluride(Ge2Sb2Te5)
RL: DEV (Device component use); USES (Uses)
(light-scattering-mode ***super*** - ***resoln*** . ***near*** - ***field*** structure ***optical*** ***disk*** using chem. reaction of Ag2O layer)
IT 7440-22-4, ***Silver*** , processes
RL: DEV (Device component use); FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); FORM (Formation, nonpreparative); PROC (Process); USES (Uses)
(light-scattering-mode ***super*** - ***resoln*** . ***near*** - ***field*** structure ***optical*** ***disk*** using chem. reaction of Ag2O layer)
IT 20667-12-3, ***Silver*** oxide(Ag2O)
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent); USES (Uses)
(light-scattering-mode ***super*** - ***resoln*** . ***near*** - ***field*** structure ***optical*** ***disk*** using chem. reaction of Ag2O layer)
RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

(1) Beztig, E; Science 1992, V257, P189
(2) Fischer, U; Phys Rev Lett 1989, V62, P458 CAPLUS
(3) Haratani, S; J Appl Phys 1994, V76, P1297 CAPLUS
(4) Inouye, Y; Opt Lett 1994, V19, P159
(5) Milster, T; Jpn J Appl Phys 1999, V38, P1793 CAPLUS
(6) Schmidt, A; Thin Solid Films 1996, V281-282, P105 CAPLUS
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(8) Tominaga, J; Jpn J Appl Phys 1992, V31, P2757 CAPLUS
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L3 ANSWER 36 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1999:1131 CAPLUS
DN 130:83385
ED Entered STN: 04 Jan 1999
TI Application of laser diagnostic techniques to characterize the spray issued from a pMDI
AU Dunbar, C. A.; Watkins, A. P.; Miller, J. F.
CS Thermo-Fluids Division, Department of Mechanical Engineering UMIST, Manchester, M60 1QD, UK
SO Proceedings of the International Conference on Liquid Atomization and Spray Systems, 7th, Seoul, Aug. 18-22, 1997 (1997), Volume 1, 641-648
Publisher: Institute for Liquid Atomization and Spray Systems, Seoul, S. Korea.
CODEN: 67BVAN
DT Conference
LA English
CC 48-3 (Unit Operations and Processes)
Section cross-reference(s): 63
AB The pressurized metered-dose inhaler (pMDI) is a compact pressurized spray dispenser designed for the oral inhalation of multiple doses of finely dispersed drug in the treatment of various pulmonary diseases, the most common being asthma. This research was concerned with the exptl. investigation of the spray issued from a pMDI and has been motivated by the urgent need to find suitable replacements to the environmentally destructive CFC-based propellants currently used in the device and to further the understanding of the mechanisms of atomization. The exptl. work was conducted using 1-D phase-Doppler ***particle*** analyzer (PDPA), yielding the most detailed temporal and spatial anal. of the pMDI spray to date. Two formulations were studied to compare the performance of an "ozone-friendly" hydrofluoroalkane propellant against that of a traditional placebo CFC-based mixt. The PDPA anal. was complemented by a visual investigation of the ***near*** -orifice flow ***field*** using ***copper*** laser strobe microcinematog. in an attempt to

obtain information on the primary atomization process of the pMDI. This work was conducted in parallel with the theor. investigation of the spray issued from a pMDI.
ST inhaler spray dispenser fluorocarbon propellant; asthma inhaler spray fluorocarbon propellant
IT Hydrocarbons, uses
RL: NUU (Other use, unclassified); USES (Uses)
(chlorofluorocarbons; laser diagnostic techniques in characterization of spray from pressurized metered dose inhalers)
IT Evaporation
(flash; laser diagnostic techniques in characterization of spray from pressurized metered dose inhalers)
IT Hydrocarbons, uses
RL: NUU (Other use, unclassified); USES (Uses)
(fluoro; laser diagnostic techniques in characterization of spray from pressurized metered dose inhalers)
IT Drug delivery systems
(inhalants; laser diagnostic techniques in characterization of spray from pressurized metered dose inhalers)
IT ***Medical*** goods
(inhalers; ***laser*** diagnostic techniques in characterization of spray from pressurized metered dose inhalers)
IT Asthma
Atomizing (spraying)
Lung, disease
Propellants (sprays and foams)
(laser diagnostic techniques in characterization of spray from pressurized metered dose inhalers)
IT Drops
(size; laser diagnostic techniques in characterization of spray from pressurized metered dose inhalers)
IT Nozzles
(spray; laser diagnostic techniques in characterization of spray from pressurized metered dose inhalers)
IT 75-69-4, R-11 75-71-8, R-12 811-97-2, R-134a
RL: NUU (Other use, unclassified); USES (Uses)
(laser diagnostic techniques in characterization of spray from pressurized metered dose inhalers)
RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

(1) Arai, M; Proc ICLASS-94 Paper II-8 1994, P286 CAPLUS
(2) Atkins, P; Pharm Tech 1992, V16(8), P26
(3) Brown, R; A I Ch E J 1962, V8(2), P149
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(6) Domnick, J; Int J Multiphase Flow 1995, V21(6), P1047 CAPLUS
(7) Dunbar, C; Proc ICLASS-97 1997
(8) Gorman, W; Pharm Tech 1993, V17(2), P34
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(12) Saffman, M; Appl Opt 1987, V26(13), P2592 CAPLUS
(13) Wiener, M; J Soc Cos Chem 1958, V7, P204

L3 ANSWER 37 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1997:592232 CAPLUS
DN 127:198119
ED Entered STN: 17 Sep 1997
TI Deposition-preventing part for physical vapor deposition apparatus
IN Uchiyama, Naoki; Mashima, Munenori; Kinoshita, Makoto; Hashimoto, Yorishige
PA Mitsubishi Materials Corporation, Japan
SO Eur. Pat. Appl., 19 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM C23C014-04
CC 75-1 (Crystallography and Liquid Crystals)
Section cross-reference(s): 74
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

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PI   EP 790327            A1    19970820    EP 1997-102254        19970212
     EP 790327            B1    19990728
         R:  DE, ES, FR, GB, IT, NL
     JP 09316643          A2    19971209    JP 1996-180739        19960710
     TW 402647            B     20000821    TW 1996-85112906      19961022
     US 5954929           A     19990921    US 1996-738660        19961030
     SG 77122             A1    20001219    SG 1996-10993         19961030
PRAI JP 1996-27584        A     19960215
     JP 1996-68123        A     19960325
     JP 1996-180739       A     19960710
CLASS
 PATENT NO.      CLASS  PATENT FAMILY CLASSIFICATION CODES
 --------------- -----  ----------------------------------------------
 EP 790327       ICM    C23C014-04
                 IPCI   C23C0014-04 [ICM,6]
                 IPCR   C23C0014-04 [I,A]; C23C0014-04 [I,C]; G11B0007-26
                        [I,A]; G11B0007-26 [I,C]
                 ECLA   C23C014/04B; G11B007/26
 JP 09316643     IPCI   C23C0014-56 [ICM,6]; C23C0030-00 [ICS,6]; G11B0005-85
                        [ICS,6]
 TW 402647       IPCI   C23C0008-40 [ICM,7]; C23C0030-00 [ICS,7]; C23F0004-00
                        [ICS,7]
 US 5954929      IPCI   C23C0014-00 [ICM,6]
                 IPCR   C23C0014-04 [I,A]; C23C0014-04 [I,C]; G11B0007-26
                        [I,A]; G11B0007-26 [I,C]
                 NCL    204/298.110; 118/720.000; 118/721.000
                 ECLA   C23C014/04B; G11B007/26
 SG 77122        IPCI   C23C0014-04 [ICM,7]
```

AB   A deposition-preventing part, ***particularly*** a ***masking*** tool, is used over an area to be protected from adhesion of a phys. vapor deposited film in phys. vapor deposition app. used to form films of metals, ***particularly*** noble metals, on CD-ROM, CD-R, or CD-E substrates. A solder-plated ***Cu*** wire, a solder-plated ***Cu*** foil tape, an Al foil tape, and/or a synthetic resin tape are attached, in a peelable manner, to a solder film formed on the surface of the substrate of a deposition-preventing part such as a ***masking*** tool, which has a surface roughness of 0.01-1 .mu.m when expressed as the arithmetic mean roughness defined according to JIS B 0601, a thickness of 5-100 .mu.m, and a m.p. of 100-450.degree..

ST   deposition prevention phys vapor deposition app; ***masking*** tool phys vapor deposition app; ***compact*** ***disk*** phys vapor deposition ***masking***

IT   Noble metals
     RL: PEP (Physical, engineering or chemical process); PROC (Process)
        (deposition-preventing part for app. for phys. vapor deposition of)

IT   Solders
        (deposition-preventing part for phys. vapor deposition app. contg. ***copper*** wire plated with)

IT   ***Optical*** ROM ***disks***
        (deposition-preventing part for phys. vapor deposition app. for coating of)

IT   Vapor deposition process
        (phys.; deposition-preventing part for app. for)

IT   7440-57-5, ***Gold*** , processes
     RL: PEP (Physical, engineering or chemical process); PROC (Process)
        (deposition-preventing part for app. for phys. vapor deposition of)

IT   7429-90-5, Aluminum, processes   7440-50-8, ***Copper*** , processes
     RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
        (deposition-preventing part for phys. vapor deposition app. contg.)

IT   7439-92-1, Lead, processes   7440-31-5, Tin, processes   12630-22-7   37256-13-6   39403-06-0, Lead 95, tin 5   66994-84-1
     RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
        (solder; deposition-preventing part for phys. vapor deposition app. contg.)

L3   ANSWER 38 OF 61 CAPLUS COPYRIGHT 2006 ACS on STN
AN   1990:207361 CAPLUS
DN   112:207361
ED   Entered STN: 26 May 1990
TI   Formation of given distributions of ***particles*** in an

inhomogeneous ***medium*** in a ***laser*** radiation field
AU Zakharov, S. D.; Zemskov, K. I.; Kazaryan, M. A.; Korotkov, N. P.
CS USSR
SO Kratkie Soobshcheniya po Fizike (1989), (9), 8-10
CODEN: KRSFAU; ISSN: 0455-0595
DT Journal
LA Russian
CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
AB A glass cell contg. aq. suspension of the transparent latex ***particles*** (diam. 2 .mu.m; concn. 105 mm-3) served as the 2nd mirror in the cavity of ***Cu*** vapor laser. The feedback mirror contained a ***mask*** which produced a desired laser beam intensity distribution on the suspension-contg. cell wall. The peak power in the illuminated parts reached 108 W/cm2. Pulse repetition frequency 10 kHz, pulse duration 20 ns, .lambda. = 0.51 and 0.58 .mu.m. Distribution of the ***particles*** (and consequently d., and refractive index) took place on the cell wall under laser irradn., the form of this distribution was controlled by the feedback mirror ***mask*** . Complete filling of the exposed cell areas by the ***particles*** took place within .apprx.10 min. The anal. of the suspension mobility during the process show that among the forces acting in the medium light pressure exceeded gradient force (related with the beam heterogeneity), and the former was detd. as 6 .times. 10-4 dyne.
ST suspension ***particle*** distribution laser cavity
IT Laser radiation, chemical and physical effects
(formation of desired distribution of transparent ***particles*** in aq. suspension by)
IT Latex
Suspensions
(light-induced controlled and desired distribution of transparent ***particles*** of, in laser radiation field)
IT Density
(profile of, formation of desired distributions of transparent ***particles*** in inhomogeneous ***medium*** in ***laser*** radiation field in relation to)
IT Mirrors
(laser, from aq. suspension of transparent ***particles*** , formation of desired and controlled distribution of ***particles*** in)
IT Lasers
(mirrors, from aq. suspension of transparent ***particles*** , formation of desired and controlled distribution of ***particles*** in)
IT 7440-50-8, ***Copper*** , uses and miscellaneous
RL: USES (Uses)
(laser based on vapor of, controlled distribution of transparent ***particles*** in aq. suspensions in cavity of)

L3 ANSWER 39 OF 61 INSPEC (C) 2006 IEE on STN
AN 2006:8794043 INSPEC
TI ***Super*** - ***resolution*** frequency-dependent efficiency of ***near*** - ***field*** ***optical*** ***disks*** with ***silver*** nanoparticles
AU Ming-Yaw Ng; Wei-Chih Liu (Dept. of Phys., Nat. Taiwan Normal Univ., Taipei, Taiwan)
SO Optics Express (14 Nov. 2005), vol.13, no.23, 35 refs.
CODEN: OPEXFF, ISSN: 1094-4087
Price: 1094-4087/2005/$15.00
Collection URL: http://www.opticsexpress.org/
Published by: Opt. Soc. America, USA
DT Journal
TC Theoretical
CY United States
LA English
AB The ***super*** - ***resolution*** capability of the AgOx-type ***super*** - ***resolution*** ***near*** - ***field*** structure disk with ***silver*** nanoparticles was studied using finite-difference time-domain method at different incident light frequencies. The ***near*** ***fields*** exhibited strongly local field enhancement around ***silver*** nanoparticles in the AgOx layer due to localized surface plasmon. The subwavelength recording marks

smaller than .lambda./10 were distinguishable since the metallic nanoparticles with high localized fields transferred evanescent waves to detectable signals in the far field. The far-field signals from random ***silver*** nanoparticles displayed similar behaviors as those from single nanoparticle and red-shifts of peak frequencies from ***particle*** - ***particle*** interaction

CC A4280T Optical storage and retrieval; A0260 Numerical approximation and analysis; A7320M Collective excitations (surface states); B4120 Optical storage and retrieval; B0290Z Other numerical methods

CT finite difference time-domain analysis; nanoparticles; ***optical*** ***disc*** storage; ***silver*** compounds; surface plasmons

ST near-field optical disks; frequency-dependent efficiency; silver nanoparticles; finite-difference time-domain method; super-resolution; surface plasmon; AgO

CHI AgO bin, Ag bin, O bin

ET O; Ag; Ag*O; AgOx; Ag cp; cp; O cp

L3 ANSWER 40 OF 61 INSPEC (C) 2006 IEE on STN

AN 2006:8693796 INSPEC

TI Enhanced scattering of random-distribution nanoparticles and evanescent ***field*** in ***super*** - ***resolution*** ***near*** - ***field*** structure

AU Li, J.M.; Shi, L.P.; Lim, K.G.; Miao, X.S.; Yang, H.X.; Chong, T.C. (Data Storage Inst., Singapore, Singapore)

SO Japanese Journal of Applied Physics, Part 1 (Regular Papers, Short Notes & Review Papers) (May 2005), vol.44, no.5B, p. 3620-2, 10 refs.
CODEN: JAPNDE, ISSN: 0021-4922
SICI: 0021-4922(200505)44:5BL.3620:ESRD;1-M
Published by: Japan Soc. Appl. Phys, Japan

DT Journal

TC Theoretical; Experimental

CY Japan

LA English

AB This study focuses on evanescent fields induced by ***silver*** nanoparticles in the ***mask*** layer and in the interfaces in an AgOx-type ***super*** - ***resolution*** ***near*** - ***field*** structure (***super*** - ***RENS***). The finite-difference time-domain (FDTD) method is used to analyze the scattering fields from the localized surface plasmons of ***silver*** nanoparticles. It has been found that the spatial extension of the evanescent field is very short along the thickness direction of the layers, and the 3-dimensional coupling patterns of the evanescent fields from the individual ***particles*** are irregular. The study also found that the intensity of the evanescent fields is dependent on the ***silver*** concentration

CC A4280T Optical storage and retrieval; A7320M Collective excitations (surface states); A0260 Numerical approximation and analysis

CT finite difference time-domain analysis; insulating thin films; ***masks*** ; nanoparticles; ***optical*** ***disc*** storage; ***silver*** ; ***silver*** compounds; surface plasmons

ST random-distribution nanoparticle scattering; evanescent field; super-resolution near-field structure; silver nanoparticles; mask layer; finite-difference time-domain method; FDTD; localized surface plasmons; 3-dimensional coupling patterns; evanescent field intensity; silver concentration; Ag; AgOx

CHI Ag el; AgO int, Ag int, O int, AgO bin, Ag bin, O bin

ET O; Ag; Ag*O; AgO; Ag cp; cp; O cp; AgOx

L3 ANSWER 41 OF 61 INSPEC (C) 2006 IEE on STN

AN 2006:8693746 INSPEC

TI Signal enhancement of ***super*** ***resolution*** enhanced ***near*** - ***field*** structure disc by ***silver*** nano- ***particles***

AU Kurihara, K.; Arai, T.; Nakano, T.; Tominaga, J. (Center for Appl. Near-Field Opt. Res., Nat. Inst. of Adv. Ind. Sci. & Technol., Ibaraki, Japan)

SO Japanese Journal of Applied Physics, Part 1 (Regular Papers, Short Notes & Review Papers) (May 2005), vol.44, no.5B, p. 3353-5, 13 refs.
CODEN: JAPNDE, ISSN: 0021-4922
SICI: 0021-4922(200505)44:5BL.3353:SESR;1-B
Published by: Japan Soc. Appl. Phys, Japan

DT Journal

TC Practical; Experimental
CY Japan
LA English
AB We propose a carrier-to-noise ratio (CNR) increment method for a ***super*** ***resolution*** enhanced ***near*** - ***field*** structure (super- ***RENS***) with ***silver*** nanoparticles. The ***silver*** nanoparticles were fabricated by the RF magnetron sputtering method. The mean diameters of the ***particles*** under as-deposited and 600.degree.C annealed conditions were evaluated as 5 nm and 15 nm, respectively. The light absorption peak of the ***silver*** nanoparticles was adjusted to a laser wavelength of 405 nm for an ***optical*** ***disc*** system. The ***silver*** nanoparticles showed a higher absorption characteristic when they were annealed at above 500.degree.C. In the case of a recording mark size of 50 nm, the CNR enhancement of the super- ***RENS*** with the ***silver*** nanoparticles was evaluated as 11 dB. This method using the ***silver*** nanoparticles provided a higher CNR increment in recording marks below the optical resolution limit
CC A4280T Optical storage and retrieval; A8116 Methods of nanofabrication and processing; A8115C Deposition by sputtering; A8140G Other heat and thermomechanical treatments; B4120 Optical storage and retrieval
CT annealing; light absorption; nanoparticles; ***optical*** ***disc*** storage; ***silver*** ; sputter deposition
ST super resolution enhanced near-field structure disc; silver nanoparticles; carrier-to-noise ratio; RF magnetron sputtering method; annealing; light absorption; optical disc system; recording mark size; optical resolution; 600 C; 405 nm; Ag
CHI Ag el
PHP temperature 8.73E+02 K; wavelength 4.05E-07 m
ET C; B

L3 ANSWER 42 OF 61 INSPEC (C) 2006 IEE on STN
AN 2005:8448103 INSPEC DN A2005-14-4280F-012; B2005-07-4130-083
TI ***Near*** ***field*** observation of a refractive index grating and a topographical grating by an optically-trapped ***gold*** ***particle***
AU Ukita, H.; Uemi, H.; Hirata, A. (Fac. of Sci. & Eng., Ritsumeikan Univ., Shiga, Japan)
SO Optical Review (Nov.-Dec. 2004), vol.11, no.6, p. 365-9, 14 refs.
CODEN: OPREFN, ISSN: 1340-6000
SICI: 1340-6000(200411/12)11:6L.365:NFOR;1-K
Published by: Opt. Soc. Japan, Japan
DT Journal
TC Experimental
CY Japan
LA English
AB We observed the ***near*** ***field*** for a refractive index grating fabricated on a planar light waveguide circuit (PLC) by scanning an optically-trapped 100 nm diameter ***gold*** ***particle*** . We demonstrate that stable trapping and scanning occur with a Gaussian laser beam at the scan velocity of 1.6 .mu.m/s and Nd:YAG laser power of 25 mW. The scattered Ar+ laser light from the ***gold*** ***particle*** is strong at high refractive indexes of the grating with periods of 1.06 .mu.m and 0.53 .mu.m, both by s and p polarized illumination. In addition, we observed the surface profile of the ***optical*** ***disk*** tracking groove with and without the ***gold*** ***particle***
CC A4280F Gratings, echelles; A4250V Mechanical effects of light; A7820D Optical constants and parameters (condensed matter); A6820 Solid surface structure; A0760P Optical microscopy; A4285D Optical fabrication, surface grinding; A4280L Optical waveguides and couplers; A4282 Integrated optics; B4130 Optical waveguides; B4140 Integrated optics
CT diffraction gratings; ***gold*** ; laser beams; light polarisation; nanoparticles; ***near*** - ***field*** scanning optical microscopy; optical fabrication; optical planar waveguides; radiation pressure; refractive index; surface topography
ST refractive index grating; topographical grating; optically-trapped gold particle; planar light waveguide circuit; Gaussian laser beam; polarized illumination; surface profile; optical disk tracking groove; 100 nm; 25 mW; Au; YAG:Nd; Ar+; YAl5O12:Nd
CHI Au el; YAl5O12:Nd ss, YAl5O12 ss, Al5O12 ss, Al5 ss, O12 ss, Al ss, Nd ss, O ss, Y ss, Nd el, Nd dop; Ar el

PHP size 1.0E-07 m; power 2.5E-02 W
ET O; Nd; Al*O*Y; Al sy 3; sy 3; O sy 3; Y sy 3; YAl5O; Y cp; cp; Al cp; O cp; Al*O; Al5O; Al; Y; Ar; Ar+; Ar ip 1; ip 1

L3 ANSWER 43 OF 61 INSPEC (C) 2006 IEE on STN
AN 2005:8384885 INSPEC DN A2005-12-4280T-002; B2005-06-4120-013
TI Read/write mechanism for a scattered type ***super*** - ***resolution*** ***near*** - ***field*** structure using an AgOx ***mask*** layer and the smallest mark reproduced
AU Ukita, H.; Ueda, Y.; Sasaki, M. (Fac. of Sci. & Eng., Ritsumeikan Univ., Japan)
SO Japanese Journal of Applied Physics, Part 2 (Letters) (Jan. 2005), vol.44, no.1A, p. 197-201, 12 refs.
CODEN: JAPLD8, ISSN: 0021-4922
SICI: 0021-4922(200501)44:1AL.197:RWMS;1-W
Published by: Japan Soc. Appl. Phys, Japan
DT Journal
TC Experimental
CY Japan
LA English
AB A working mechanism for a scattered type ***super*** - ***resolution*** ***near*** - ***field*** structure (***super*** - ***RENS***) disk using a ***silver*** oxide (AgOx) ***mask*** layer has been studied experimentally. The AgOx ***mask*** layer has five possible states depending on the laser power: AgOx (as-depo), uniformly dispersed ***Ag*** ***particles*** (after the initialization of 3.5 mW), ***Ag*** cluster (4-5 mW), ***Ag*** diffusion (5.5-7.5 mW), and a ***Ag*** ring structure (greater than 8 mW) for an objective lens numerical aperture of 0.5, a laser wavelength of 826 nm and a medium velocity of 2 m/s. On the other hand, the GeSbTe recording layer has the following possible states: crystal, halfway amorphous, completely amorphous, and gas bubble associated with ***Ag*** ***particles*** . For ***super*** - ***resolution*** read power (4 mW), the ***mask*** layer has a ***Ag*** ring structure that increases both the signal carrier to noise ratio and the resolution limit. We improve the resolution limit of 413 nm to 50 nm at the duty ratio of 10% for the write optical pulse
CC A4280T Optical storage and retrieval; A4280A Optical lenses and mirrors; B4120 Optical storage and retrieval
CT antimony compounds; diffusion; germanium compounds; lenses; ***masks*** ; ***optical*** ***disc*** storage; ***silver*** compounds; zinc compounds
ST read-write mechanism; scattered type super resolution near field structure; AgOx mask layer; super resolution near field structure disk; silver oxide mask layer; laser power; Ag particles; Ag cluster; Ag diffusion; Ag ring structure; objective lens numerical aperture; laser wavelength; GeSbTe recording layer; signal carrier to noise ratio; SNR; resolution limit; write optical pulse; 3.5 mW; 4 to 5 mW; 5.5 to 7.5 mW; 826 nm; 413 to 50 nm; 2 m/s; ZnSiO2-AgOx-GeSbTe
CHI ZnSiO2-AgO-GeSbTe int, GeSbTe int, ZnSiO2 int, SiO2 int, AgO int, Ag int, Ge int, O2 int, Sb int, Si int, Te int, Zn int, O int, GeSbTe ss, ZnSiO2 ss, SiO2 ss, Ge ss, O2 ss, Sb ss, Si ss, Te ss, Zn ss, O ss, AgO bin, Ag bin, O bin
PHP power 3.5E-03 W; power 4.0E-03 to 5.0E-03 W; power 5.5E-03 to 7.5E-03 W; wavelength 8.26E-07 m; wavelength 5.0E-08 to 4.13E-07 m; velocity 2.0E+00 m/s
ET Sb*Te; Sb sy 2; sy 2; Te sy 2; SbTe; Sb cp; cp; Te cp; Ag*Ge*O*Sb*Si*Te; Ag sy 6; sy 6; Ge sy 6; O sy 6; Sb sy 6; Si sy 6; Te sy 6; SiO2; Si cp; O cp; AgOx; Ag cp; GeSbTe; Ge cp; SiO2-AgOx-GeSbTe; O*Si; SiO; Ag*Ge*O*Sb*Te; Ag sy 5; sy 5; Ge sy 5; O sy 5; Sb sy 5; Te sy 5; AgO; AgO-GeSbTe; Ge*Sb*Te; Ge sy 3; sy 3; Sb sy 3; Te sy 3; O*Si*Zn; O sy 3; Si sy 3; Zn sy 3; ZnSiO; Zn cp; Ag*O; Ag; Ge; O; Sb; Si; Te; Zn

L3 ANSWER 44 OF 61 INSPEC (C) 2006 IEE on STN
AN 2005:8363169 INSPEC DN A2005-11-6470K-005; B2005-05-4120-020
TI Structural phase transition of AgOx sandwiched between ZnS-SiO2 protective layers under thermal and laser pulse annealing for ***super*** - ***resolution*** ***near*** - ***field*** recording
AU Yung-Chiun Her; Yuh-Chang Lan; (Dept. of Mater. Eng., Nat. Chung-Hsing Univ., Taichung, Taiwan), Wei-Chih Hsu; Song-Yeu Tsai
SO Japanese Journal of Applied Physics, Part 1 (Regular Papers, Short Notes

& Review Papers) (Nov. 2004), vol.43, no.11A, p. 7519-23, 13 refs.
CODEN: JAPNDE, ISSN: 0021-4922
SICI: 0021-4922(200411)43:11AL.7519:SPTA;1-3
Published by: Japan Soc. Appl. Phys, Japan
DT Journal
TC Experimental
CY Japan
LA English
AB The as-deposited AgOx prepared at an oxygen flow ratio of 0.5 consisted of Ag2O and AgO phases. During thermal annealing, the reduction of AgO into Ag2O, decomposition of Ag2O into ***Ag*** and O2, and out diffusion and aggregation of decomposed ***Ag*** would take place successively. The chemical decomposition of AgOx film sandwiched between two ZnS-SiO2 protective layers was confirmed to be an irreversible process. As being irradiated by a high power laser pulse similar to the recording process, a hollow ***Ag*** cylinder, or ring, serving as an aperture, was formed in the AgOx ***mask*** layer, and small ***Ag*** ***particles*** , serving as light-scattering centers, were precipitated in the center region. During the readout process, the small aperture can significantly reduce the readout laser spot size, while the strong ***near*** - ***field*** interaction between precipitated ***Ag*** ***particles*** and sub-wavelength marks can effectively enhance the readout signal. That elucidates the recording and readout mechanisms of ***super*** - ***resolution*** ***near*** - ***field*** structure disk with an AgOx ***mask*** layer
CC A6470K Solid-solid transitions; A4280T Optical storage and retrieval; A6865 Low-dimensional structures: growth, structure and nonelectronic properties; A8140G Other heat and thermomechanical treatments; A8230L Decomposition reactions (pyrolysis, dissociation, and group ejection); A6475 Solubility, segregation, and mixing; A4280X Optical coatings; A6180B Ultraviolet, visible and infrared radiation effects; B4120 Optical storage and retrieval; B4190F Optical coatings and filters
CT aggregation; diffusion; dissociation; laser beam annealing; nonlinear optics; ***optical*** ***disc*** storage; optical multilayers; precipitation; reduction (chemical); sandwich structures; silicon compounds; ***silver*** compounds; solid-state phase transformations; thin films; zinc compounds
ST structural phase transition; AgOx film sandwich; ZnS-SiO2 protective layers; thermal annealing; laser pulse annealing; super resolution near field recording; Ag2O phase; AgO reduction; diffusion; aggregation; chemical decomposition; irreversible process; high power laser pulse irradiation; hollow Ag cylinder; AgOx mask layer; Ag particles precipitation; light scattering centers; readout process; readout laser spot size; strong near field interaction; super resolution near field structure disk; ZnS-SiO2-AgOx-ZnS-SiO2
CHI ZnS-SiO2-AgO-ZnS-SiO2 int, SiO2 int, AgO int, ZnS int, Ag int, O2 int, Si int, Zn int, O int, S int, SiO2 bin, AgO bin, ZnS bin, Ag bin, O2 bin, Si bin, Zn bin, O bin, S bin
ET O*Si; SiO2; Si cp; cp; O cp; O; Ag; Ag*O*S*Si*Zn; Ag sy 5; sy 5; O sy 5; S sy 5; Si sy 5; Zn sy 5; AgOx; Ag cp; ZnS; Zn cp; S cp; SiO2-AgOx-ZnS-SiO2; SiO; AgO; AgO-ZnS-SiO; Ag*O; S*Zn; Si; Zn; S; O*S*Si*Zn; O sy 4; sy 4; S sy 4; Si sy 4; Zn sy 4; ZnS-SiO2; Ag2O; O2

L3 ANSWER 45 OF 61 INSPEC (C) 2006 IEE on STN
AN 2005:8281552 INSPEC DN A2005-06-4280F-006
TI ***Near*** ***field*** observation of a refractive index grating and a topographical grating by an optically-trapped ***gold*** ***particle***
AU Ukita, H.; Uemi, H. (Fac. of Sci. & Eng., Ritsumeikan Univ., Shiga, Japan)
SO Conference on Lasers and Electro-Optics (CLEO), vol.1, 2004, p. 3 pp. vol.1 of 2 vol. (3500) pp., 4 refs.
Editor(s): Sawchuk, A.A.
Published by: IEEE, Piscataway, NJ, USA
Conference: Conference on Lasers and Electro-Optics (CLEO), San Francisco, CA, USA, 16-21 May 2004
Sponsor(s): APS; IEEE; Opt. Soc. of America
DT Conference; Conference Article
TC Experimental
CY United States
LA English
AB A refractive index grating fabricated on a planar light waveguide circuit

(PLC) and an ***optical*** ***disk*** tracking groove profile are observed by scanning an optically-trapped 100-nm diameter ***gold*** ***particle***

CC A4280F Gratings, echelles; A7820D Optical constants and parameters (condensed matter); A4270Y Other optical materials; A4285D Optical fabrication, surface grinding; A4280L Optical waveguides and couplers; A7320M Collective excitations (surface states)

CT diffraction gratings; ***gold*** ; nanoparticles; optical fabrication; optical materials; optical planar waveguides; radiation pressure; refractive index; surface plasmons

ST near field observation; refractive index grating; topographical grating; optically-trapped gold particle; planar light waveguide circuit; optical disk tracking groove profile; 100 nm; Au

CHI Au el

PHP size 1.0E-07 m

L3 ANSWER 46 OF 61 INSPEC (C) 2006 IEE on STN

AN 2005:8235137 INSPEC DN A2005-04-4280T-038; B2005-02-4120-050

TI Signal characteristics of ***super*** - ***resolution*** ***near*** - ***field*** structure ***disk*** in blue ***laser*** system

AU Jooho Kim; Inoh Hwang; Hyunki Kim; Duseop Yoon; Insik Park; Dongho Shin; (Digital Media R&D Center, Samsung Electron. Co. Ltd., Suwon, South Korea), Yunchang Park; Tominaga, J.

SO Japanese Journal of Applied Physics, Part 1 (Regular Papers, Short Notes & Review Papers) (July 2004), vol.43, no.7B, p. 4921-4, 16 refs.
CODEN: JAPNDE, ISSN: 0021-4922
SICI: 0021-4922(200407)43:7BL.4921:SCSR;1-#
Published by: Japan Soc. Appl. Phys, Japan

DT Journal

TC Practical; Experimental

CY Japan

LA English

AB We report the signal characteristics of a ***super*** - ***resolution*** ***near*** - ***field*** structure (***super*** - ***RENS***) ***disk*** in a blue ***laser*** system (laser wavelength, 405 nm; numerical aperture (NA), 0.85). By introducing a new structure for the blue laser system, a 42.5 dB carrier to noise ratio (CNR) at a 50-nm-mark-length-signal (which is equivalent to a 75 GB capacity with a 0.32 micrometer track pitch and a 1-7 modulation code (Blu-ray disc (BD) format)) and a much higher readout-stability were obtained. Transmission electron microscope (TEM) image analysis revealed that the new blue structure has clear diffusion protection barriers produced by continuous ***Pt*** ***particles*** , which is related to higher CNR and readout stability characteristics

CC A4280T Optical storage and retrieval; A4255R Lasing action in other solids; B4120 Optical storage and retrieval; B4320G Solid lasers

CT diffusion barriers; ***optical*** ***disc*** storage; ***platinum*** compounds; silicon compounds; solid lasers; transmission electron microscopy; zinc compounds

ST signal properties; super resolution near field structure disk; blue laser system; micrometer track pitch; modulation code; transmission electron microscopy; TEM; clear diffusion protection barriers; Blu-ray disc format; laser wavelength; numerical aperture; carrier-noise ratio; NA; CNR; 50 nm; 0.32 micron; 405 nm; 75 GB; 42.5 dB; ZnS-SiO2-PtO

CHI ZnS-SiO2-PtO int, SiO2 int, PtO int, ZnS int, O2 int, Pt int, Si int, Zn int, O int, S int, SiO2 bin, PtO bin, ZnS bin, O2 bin, Pt bin, Si bin, Zn bin, O bin, S bin

PHP size 5.0E-08 m; size 3.2E-07 m; wavelength 4.05E-07 m; memory size 8.1E+10 Byte; noise figure 4.25E+01 dB

ET O*Pt*Si; O sy 3; sy 3; Pt sy 3; Si sy 3; SiO2; Si cp; cp; O cp; PtO; Pt cp; SiO2-PtO; O*Si; SiO; O*Pt; S*Zn; ZnS; Zn cp; S cp; O; Pt; Si; Zn; S; B

L3 ANSWER 47 OF 61 INSPEC (C) 2006 IEE on STN

AN 2004:8042046 INSPEC DN A2004-18-4280T-002; B2004-09-4120-013

TI Effect of constituent phases of reactively sputtered AgOx film on recording and readout mechanisms of ***super*** - ***resolution*** ***near*** - ***field*** structure disk

AU Yung-Chiun Her; Yuh-Chang Lan; (Dept. of Mater. Eng., Nat. Chung Hsing Univ., Taichung, Taiwan), Wei-Chih Hsu; Song-Yeu Tsai

SO Journal of Applied Physics (1 Aug. 2004), vol.96, no.3, p. 1283-8, 9

refs.
CODEN: JAPIAU, ISSN: 0021-8979
SICI: 0021-8979(20040801)96:3L.1283:ECPR;1-I
Price: 0021-8979/2004/96(3)/1283(6)/$20.00
Doc.No.: S0021-8979(04)11415-1
Published by: AIP, USA

DT Journal
TC Experimental
CY United States
LA English
AB We have studied the dependence of the constituent phases of reactively sputtered AgOx ***mask*** layer on the recording and readout mechanisms of ***super*** - ***resolution*** ***near*** - ***field*** disk. At low oxygen flow ratios, the AgOx ***mask*** layer was found to be composed of an appreciable amount of ***Ag*** ***particles*** with sizes of tens of nanometers and Ag2O phase. After recording by a high power laser pulse, a hollow ***Ag*** cylinder that had its center filled with O2 was formed in the AgOx ***mask*** layer. The hollow ***Ag*** cylinder would serve as an aperture and could effectively reduce the laser spot size during readout, leading to the ***super*** - ***resolution*** effect only. At high oxygen flow ratios, the AgOx ***mask*** layer was found to be mostly composed of Ag2O and/or AgO phases. After recording by a high power laser pulse, a hollow ***Ag*** cylinder that had its center filled with nanosized ***Ag*** ***particles*** was formed in the AgOx ***mask*** layer. The nanosized ***Ag*** precipitates would serve as light-scattering centers and could yield strong ***near*** - ***field*** interaction with the subwavelength marks, resulting in both the ***super*** - ***resolution*** and ***near*** - ***field*** effects during readout
CC A4280T Optical storage and retrieval; A6855 Thin film growth, structure, and epitaxy; A8115C Deposition by sputtering; A4280X Optical coatings; B4120 Optical storage and retrieval; B0520B Sputter deposition; B4190F Optical coatings and filters
CT multilayers; nanoparticles; ***optical*** ***disc*** storage; optical films; ***particle*** size; silicon compounds; ***silver*** compounds; sputter deposition; thin films; zinc compounds
ST sputtered AgOx film; super resolution near field structure disk; oxygen flow; particle size; laser pulse; AgOx mask layer; light scattering centers; strong near field interaction; nanosized Ag particles; laser spot size; precipitation; ZnS-SiO2-AgOx-ZnS-SiO2
CHI ZnS-SiO2-AgO-ZnS-SiO2 int, SiO2 int, AgO int, ZnS int, Ag int, O2 int, Si int, Zn int, O int, S int, SiO2 bin, AgO bin, ZnS bin, Ag bin, O2 bin, Si bin, Zn bin, O bin, S bin
ET Ag*O; AgOx; Ag cp; cp; O cp; Ag; Ag*O*S*Si*Zn; Ag sy 5; sy 5; O sy 5; S sy 5; Si sy 5; Zn sy 5; SiO2; Si cp; ZnS; Zn cp; S cp; SiO2-AgOx-ZnS-SiO2; O*Si; SiO; AgO; AgO-ZnS-SiO; S*Zn; O; Si; Zn; S; Ag2O; O2

L3 ANSWER 48 OF 61 INSPEC (C) 2006 IEE on STN
AN 2004:8026002 INSPEC DN A2004-17-4280T-002; B2004-08-4120-014
TI Super-resolutional readout disk with metal-free phthalocyannic recording layer
AU Shima, T.; Kuwahara, M.; Fukaya, T.; Nakano, T.; Tominaga, J. (Center for Appl. Near-Field Opt. Res., Nat. Inst. of Adv. Ind. Sci. & Technol., Tsukuba, Japan)
SO Japanese Journal of Applied Physics, Part 2 (Letters) (15 Jan. 2004), vol.43, no.1A/B, p. L88-90, 7 refs.
CODEN: JAPLD8, ISSN: 0021-4922
SICI: 0021-4922(20040115)43:1A/BL.l88:SRRD;1-Y
Published by: Japan Soc. Appl. Phys, Japan
DT Journal
TC Practical; Theoretical
CY Japan
LA English
AB An ***optical*** ***disk*** with metal-free phthalocyanine (C32H18N8, H2PC) and Ag6.0In4.4Sb61.0Te28.6 layers were prepared. It was possible to readout 200-nm mark with carrier-to-noise ratio of 41 dB that is beyond the resolution limit size. The cross-sectional image confirmed that H2PC is a recording layer forming deformation. Metal ***particles*** were found not to be necessary for the super-resolutional readout, and the results should be helpful for

understanding the readout mechanism of the ***super*** - ***resolution*** ***near*** - ***field*** structure (***super*** - ***RENS***) disk. An advantage of using H2PC recording layer was that it is resistant to temperature increase (400.degree.C) induced by the laser irradiation for the super-resolutional readout

CC A4280T Optical storage and retrieval; B4120 Optical storage and retrieval

CT indium compounds; ***optical*** ***disc*** storage; organic compounds; semiconductor materials; ***silver*** compounds

ST metal free phthalocyannic recording layer; optical disk; AgInSbTe layers; carrier-noise ratio; super resolutional readout disk; readout mechanism; super resolution near field structure disk; laser irradiation; 400 degC; 200 nm; AgInSbTe

CHI AgInSbTe int, Ag int, In int, Sb int, Te int, AgInSbTe ss, Ag ss, In ss, Sb ss, Te ss

PHP temperature 6.73E+02 K; size 2.0E-07 m

ET In*Sb*Te; In sy 3; sy 3; Sb sy 3; Te sy 3; InSbTe; In cp; cp; Sb cp; Te cp; Ag; In; Sb; Te; Ag*In*Sb*Te; Ag sy 4; sy 4; In sy 4; Sb sy 4; Te sy 4; AgInSbTe; Ag cp; C*H*N; C32H18N8; C cp; H cp; N cp; C*H*P; H2PC; P cp; Ag6.0In4.4Sb61.0Te28.6; B; C

L3 ANSWER 49 OF 61 INSPEC (C) 2006 IEE on STN

AN 2004:7930430 INSPEC DN A2004-11-4280T-003; B2004-05-4120-017

TI Thermal simulation for a two-dimensional ***near*** - ***field*** optical recording system using a vertical-cavity surface-emitting laser

AU Kurihara, K.; Nanri, K.; (Dept. of Phys., Tokai Univ., Kanagawa, Japan), Goto, K.

SO Applied Physics Letters (26 April 2004), vol.84, no.17, p. 3415-17, 17 refs.
CODEN: APPLAB, ISSN: 0003-6951
SICI: 0003-6951(20040426)84:17L.3415:TSDN;1-A
Price: 0003-6951/2004/84(17)/3415(3)/$22.00
Doc.No.: S0003-6951(04)01514-1
Published by: AIP, USA

DT Journal

TC Practical; Theoretical

CY United States

LA English

AB An optical recording method with high throughput is required to create a two-dimensional ***near*** - ***field*** optical memory system using a vertical-cavity surface-emitting laser (VCSEL). Optical recording is possible with the combination of a ***near*** - ***field*** probe and patterned medium. A patterned medium consisting of 40 nm periodic dots with phase change medium and ***silver*** nanoparticles were used for plasmon resonance induced by an electromagnetic wave. The electric field power density at the ***silver*** nanoparticles was increased about 87 000 times over that with a structure without patterned medium. Heat from this structure is effectively used by thermal conduction out of a ***silver*** nanoparticle and by concentrating the heat on a ***particle*** . When the 1 mW optical intensity from a VCSEL is used, ***near*** - ***field*** optical recording is achieved. The recorded feature size was estimated at 40 nm. In this letter, a recording method is described using plasmon resonance and thermal conduction effects

CC A4280T Optical storage and retrieval; A7320M Collective excitations (surface states); B4120 Optical storage and retrieval

CT heat conduction; nanoparticles; optical storage; ***silver*** ; surface emitting lasers; surface plasmon resonance; thermal conductivity

ST thermal simulation; two-dimensional near field optical recording system; vertical cavity surface emitting laser; VCSEL; phase change medium; silver nanoparticles; plasmon resonance; electromagnetic wave; electric field power density; thermal conduction; heat; optical intensity; Ag

CHI Ag el

L3 ANSWER 50 OF 61 INSPEC (C) 2006 IEE on STN

AN 2004:7923513 INSPEC DN A2004-10-4262A-011; B2004-05-4360B-014

TI Underwater and water-assisted laser processing: part 2-etching, cutting and rarely used methods

AU Kruusing, A. (Dept. of Mechatronics, Tallinn Tech. Univ., Estonia)

SO Optics and Lasers in Engineering (Feb. 2004), vol.41, no.2, p. 329-52, 124 refs.
CODEN: OLENDN, ISSN: 0143-8166
SICI: 0143-8166(200402)41:2L.329:UWAL;1-B

Price: 0143-8166/04/$30.00
Published by: Elsevier, UK

DT Journal
TC General Review
CY United Kingdom
LA English
AB In the second part of the article, the subtractive process-laser etching and cutting-in the presence of liquid water will be reviewed; but the rarely used methods of water assisted/underwater laser processing, such as welding, silicon wafer breaking, surface modification of polymers, pulsed laser deposition, ***particle*** formation and water ***mask*** defined microstructures fabrication, will also be described. Etching and cutting under water provide better tolerances and smaller heat-affected zone widths and avoid the re-deposition of debris. Irradiation under water results in increased wetting of fluoropolymers, and laser ablation in water vapor provides deposition of highly crystalline hydroxyapatite coatings. Laser irradiation of solid targets in water has been used to fabricate ***Ag*** , ***Au*** , Ni ***Cu*** and carbon nanoparticles. The results of an original study on the formation of free-standing high-aspect ratio Pb(ZrxTi1-x)O3 microplates fabricated by laser irradiation of Pb(ZrxTi1-x)O3 ceramics in water are also reported. The platelets were up to 60 .mu.m in diameter and 50 to 160 nm in thickness. The use of neutral liquids other than water and some medical applications of underwater/water-assisted laser light driven process will also be briefly reviewed
CC A4262A Laser materials processing; A4260H Laser beam characteristics and interactions; A4285D Optical fabrication, surface grinding; A8115I Pulsed laser deposition; A8760F Optical and laser radiation (medical uses); A0130R Reviews and tutorial papers; resource letters; B4360B Laser materials processing; B4330 Laser beam interactions and properties; B0520H Pulsed laser deposition
CT carbon; ceramics; ***copper*** ; elemental semiconductors; ***gold*** ; ***laser*** applications in ***medicine*** ; laser beam cutting; laser beam effects; laser beam etching; laser beam welding; lead compounds; nanoparticles; nickel; optical fabrication; polymers; pulsed laser deposition; reviews; silicon; ***silver*** ; surface treatment; water
ST underwater laser processing; water-assisted laser processing; laser etching; laser cutting; subtractive process; liquid water; welding; silicon wafer breaking; surface modification; polymers; pulsed laser deposition; particle formation; water mask; microstructures fabrication; debris redeposition; wetting; fluoropolymers; laser ablation; water vapor; highly crystalline hydroxyapatite coatings; laser irradiation; solid targets; Ag nanoparticles; Au nanoparticles; Ni nanoparticles; Cu nanoparticles; carbon nanoparticles; free-standing high-aspect ratio; Pb(ZrxTi1-x)O3 microplates; (Ti1-x)O3 ceramics; platelets; neutral liquids; medical applications; 50 to 160 nm; Ag; Au; Ni; Cu; C; Pb(ZrxTi1-x)O3
CHI Ag el; Au el; Ni el; Cu el; C el; PbZrTiO3 ss, TiO3 ss, O3 ss, Pb ss, Ti ss, Zr ss, O ss
PHP size 5.0E-08 to 1.6E-07 m
ET O*Ti*Zr; O sy 3; sy 3; Ti sy 3; Zr sy 3; (ZrxTi1-x)O3; Zr cp; cp; Ti cp; O cp; ZrTiO; O*Ti; TiO; O; Pb; Ti; Zr; Ag; Au; Ni; Cu; O*Pb*Ti*Zr; O sy 4; sy 4; Pb sy 4; Ti sy 4; Zr sy 4; Pb(ZrxTi1-x)O3; Pb cp

L3 ANSWER 51 OF 61 INSPEC (C) 2006 IEE on STN
AN 2003:7812808 INSPEC DN A2004-03-4280T-060; B2004-02-4120-059; C2004-02-5320K-032
TI Simulation of ***super*** ***resolution*** ***near*** - ***field*** structure (***Super*** - ***RENS***) using finite differential time domain (FDTD) method
AU Lu Yonghua; Ming Hai; Jiao Xiaojin; Wang Pei (Dept. of Phys., Univ. of Sci. & Technol. of China, Hefei, China)
SO Proceedings of the SPIE - The International Society for Optical Engineering (2002), vol.4930, p. 503-7, 7 refs.
CODEN: PSISDG, ISSN: 0277-786X
SICI: 0277-786X(2002)4930L.503:SSRN;1-1
Price: 0277-786X/02/$15.00
Published by: SPIE-Int. Soc. Opt. Eng, USA
Conference: Advanced Optical Storage Technology, Shanghai, China, 15-18 Oct. 2002
Sponsor(s): SPIE

DT Conference; Conference Article; Journal
TC Application
CY United States
LA English
AB In this paper, modified finite differential time domain (FDTD) method is used to investigate ***super*** ***resolution*** ***near*** - ***field*** structure (***Super*** - ***RENS***). The random distributed ***Ag*** ***particles*** , which is responsible for the localization and the enhancement of the surface plasmon within the Super- ***RENS*** , is included in this simulation. The ***near*** - ***field*** optical distribution when recording mark is just beneath the nonlinear aperture is achieved. And the transmitted readout signal is also simulated
CC A4280T Optical storage and retrieval; A7320M Collective excitations (surface states); B4120 Optical storage and retrieval; B0290Z Other numerical methods; C5320K Optical storage; C4190 Other numerical methods
CT finite difference time-domain analysis; ***optical*** ***disc*** storage; ***silver*** ; surface plasmons
ST super resolution near-field structure; finite differential time domain method; FDTD; random distributed Ag particles; localization; enhancement; surface plasmon; recording mark; nonlinear aperture; transmitted readout signal; Ag
CHI Ag el
ET Ag

L3 ANSWER 52 OF 61 INSPEC (C) 2006 IEE on STN
AN 2003:7743537 INSPEC DN A2003-22-4280T-001; B2003-11-4120-010
TI Recording and readout mechanisms of ***super*** - ***resolution*** ***near*** - ***field*** structure disk with a ***silver*** oxide ***mask*** layer
AU Yung-Chiun Her; Yuh-Chang Lan; (Dept. of Mater. Eng., Nat. Chung Hsing Univ., Taiwan, Taiwan), Wei-Chih Hsu; Song-Yeu Tsai
SO Applied Physics Letters (15 Sept. 2003), vol.83, no.11, p. 2136-8, 6 refs.
CODEN: APPLAB, ISSN: 0003-6951
SICI: 0003-6951(20030915)83:11L.2136:RRMS;1-1
Price: 01/03/6951/2003/83(11)/2136(3)/$20.00
Doc.No.: S0003-6951(03)06036-4
Published by: AIP, USA
DT Journal
TC Application; Experimental
CY United States
LA English
AB The chemical decomposition of AgOx sandwiched between two ZnS-SiO2 protective layers was an irreversible process. We confirmed that a hollow ***Ag*** cylinder, or ring, serving as an aperture, was formed and small ***Ag*** ***particles*** were precipitated in the center region during the recording process. The small aperture can significantly reduce the laser spot size during the readout process and the strong ***near*** - ***field*** interaction between precipitated ***Ag*** ***particles*** and subwavelength marks can effectively enhance the readout signal. That clarifies both the ***super*** - ***resolution*** effect and the ***near*** - ***field*** interaction in the ***super*** - ***resolution*** ***near*** - ***field*** structure disk
CC A4280T Optical storage and retrieval; B4120 Optical storage and retrieval
CT annealing; ***masks*** ; ***optical*** ***disc*** storage; optical multilayers; ***silver*** compounds
ST readout mechanisms; recording mechanisms; super-resolution near-field structure disk; silver oxide mask layer; as-deposited AgOx; flow ratio; isothermal annealing; decomposed Ag; precipitated silver particles; protective layer; chemical decomposition; ZnS-SiO2 protective layers; irreversible process; hollow Ag cylinder; Ag ring; small aperture; laser spot size; strong near-field interaction; subwavelength marks; nonlinear optical layer; AgOx; Ag; Ag2O; ZnS-SiO2
CHI AgO int, Ag int, O int, AgO bin, Ag bin, O bin; Ag el; Ag2O bin, Ag2 bin, Ag bin, O bin; ZnS-SiO2 int, SiO2 int, ZnS int, O2 int, Si int, Zn int, O int, S int, SiO2 bin, ZnS bin, O2 bin, Si bin, Zn bin, O bin, S bin
ET Ag*O; AgOx; Ag cp; cp; O cp; O*Si; SiO2; Si cp; Ag; O; AgO; SiO; S*Zn; ZnS; Zn cp; S cp; Si; Zn; S; O*S*Si*Zn; O sy 4; sy 4; S sy 4; Si sy 4; Zn sy 4; ZnS-SiO2

L3 ANSWER 53 OF 61 INSPEC (C) 2006 IEE on STN
AN 2003:7617128 INSPEC DN A2003-12-4280T-072; B2003-06-4120-076
TI Recording and readout mechanisms of ***super*** - ***resolution*** ***near*** - ***field*** structure disc with ***silver*** -oxide layer
AU Kikukawa, T.; (Inf. Technol. Res. Center, TDK Corp., Nagano, Japan), Tachibana, A.; Fuji, H.; Tominaga, J.
SO Japanese Journal of Applied Physics, Part 1 (Regular Papers, Short Notes & Review Papers) (Feb. 2003), vol.42, no.2B, p. 1038-9, 3 refs.
CODEN: JAPNDE, ISSN: 0021-4922
SICI: 0021-4922(200302)42:2BL.1038:RRMS;1-#
Published by: Japan Soc. Appl. Phys, Japan
Conference: 2002 International Symposium on Optical Memory and Optical Data Storage Topical Meeting. Joint International Symposium on Optical Memory and Optical Data Storage 2002. Technical Digest, Waikoloa, HI, USA, 7-11 July 2002
Sponsor(s): IEEE/Lasers & Electro-Opt. Soc.; OSA - Opt. Soc. America; SPIE - Int. Soc. Opt. Eng.; JSAP - Japan Soc. Appl. Phys.; MSJ - Magnetics Soc. Japan; OITDA - Optoelectron. Ind. & Technol. Dev. Assoc.; IEICE; Chemical Soc. Japan; Inf. Process. Soc. Japan; Inst. Electr. Eng. Japan; Inst. Image Inf. & Telev. Eng.; Japan Soc. Precision Eng.; Laser Soc. Japan
DT Conference; Conference Article; Journal
TC Experimental
CY Japan
LA English
AB We observed recorded and readout states of a ***super*** - ***resolution*** ***near*** - ***field*** structure disc with a AgO layer by the use of a transmission electron microscope. It was confirmed that recording is caused by the explosion of AgO and that the deformation of the layers due to the explosion becomes a recorded mark. The ***Ag*** ***particles*** which irreversibly precipitate after a high readout power irradiation are considered to be the origin of the ***super*** - ***resolution*** readout
CC A4280T Optical storage and retrieval; A4230H Resolution of optical images; A4270Y Other optical materials; B4120 Optical storage and retrieval; B4110 Optical materials
CT image resolution; ***optical*** ***disc*** storage; optical multilayers; precipitation; ***silver*** compounds; storage media; transmission electron microscopy
ST super-resolution near-field structure disc; readout mechanisms; recording mechanisms; silver-oxide layer; recorded states; readout states; AgO layer; transmission electron microscope; AgO explosion; deformation; recorded mark; Ag particles; irreversible precipitation; high readout power irradiation; super-resolution readout; AgO; Ag
CHI AgO bin, Ag bin, O bin; Ag el
ET O; Ag; Ag*O; AgO; Ag cp; cp; O cp

L3 ANSWER 54 OF 61 INSPEC (C) 2006 IEE on STN
AN 2003:7613338 INSPEC DN A2003-12-8115C-025; B2003-06-0520B-024
TI Investigations of sputtered ***silver*** oxide deposits for the super- ***RENS*** high density optical data storage application
AU Buchel, D.; Mihalcea, C.; Fukaya, T.; Atoda, N.; Tominaga, J. (Lab. for Adv. Opt. Technol., Nat. Inst. of Adv. Ind. Sci. & Technol., Ibaraki, Japan)
SO Applications of Ferromagnetic and Optical Materials, Storage and Magnetoelectronics (Materials Research Society Symposium Proceedings Vol.674), 2001, p. V3.2.1-6 of xvii+498 pp., 11 refs.
Editor(s): Borg, H.J.; Bussmann, K.; Egelhoff, W.F.; Hesselink, L.; Majetich, S.A.; Murdock, E.S.; Stadler, B.J.H.; Vazquez, M.; Wuttig, M.; Xiao, J.Q.
ISBN: 1 55899 610 9
Published by: Mater. Res. Soc, Warrendale, PA, USA
Conference: Applications of Ferromagnetic and Optical Materials, Storage and Magnetoelectronics Symposium, San Francisco, CA, USA, 16-20 April 2001
DT Conference; Conference Article
TC Application; Experimental
CY United States
LA English
AB Thin ***silver*** oxide films used as ***mask*** layers in ***super*** - ***Resolution*** Nearfield Structure (***super*** -

RENS) ***disks*** for high density ***optical*** data storage were reactively sputter-deposited and their composition was determined by spectroscopic means. We found that the stoichiometry of the films changed with the oxygen content in the sputtering gas atmosphere. With a stepwise increase in the percentage of O2 from 0-100%, the corresponding layers consist of ***Ag*** , mixtures of ***Ag*** and Ag2O, Ag2O, mixtures of Ag2O and AgO and AgO. Laser activation of such oxidic phase containing deposits results in the decomposition of the material and excitation of strong local plasmons in the remaining ***silver*** clusters. This was confirmed by acquiring surface enhanced Raman spectra (SERS) of benzoic acid (BA), ***copper*** phthalocyanine (CP) and internal carbon impurities on ***silver*** oxide substrates. From this data, we conclude that the sub-wavelength ***resolution*** obtained in ***super*** - ***RENS*** disks is mediated by local surface plasmons on small ***silver*** ***particles*** forming in the ***mask*** layer

CC A8115C Deposition by sputtering; A7320M Collective excitations (surface states); A6820 Solid surface structure; A6480E Stoichiometry and homogeneity; A6475 Solubility, segregation, and mixing; A6855 Thin film growth, structure, and epitaxy; A4280X Optical coatings; A4280T Optical storage and retrieval; A7830G Infrared and Raman spectra in inorganic crystals; A7865P Optical properties of other inorganic semiconductors and insulators (thin films/low-dimensional structures); B0520B Sputter deposition; B4190F Optical coatings and filters; B4110 Optical materials; B4120 Optical storage and retrieval

CT decomposition; impurities; ***masks*** ; metal clusters; ***optical*** ***disc*** storage; optical films; ***silver*** compounds; sputter deposition; stoichiometry; surface composition; surface enhanced Raman scattering; surface plasmons

ST thin silver oxide films; mask layers; super resolution nearfield structure disks; high density optical data storage; reactive sputter deposition; composition; sputtering gas atmosphere; laser activation; oxidic phase; material decomposition; local plasmons excitation; silver clusters; surface enhanced Raman spectra; SERS; benzoic acid; copper phthalocyanine; carbon impurities; silver oxide substrates; subwavelength resolution; surface plasmons; silver particles; stoichiometry; AgO:C

CHI AgO:C sur, AgO sur, Ag sur, C sur, O sur, AgO:C ss, Ag ss, C ss, O ss, AgO bin, Ag bin, O bin, C el, C dop

ET C*O; O:C; C doping; doped materials; Ag*O; AgO; Ag cp; cp; O cp; Ag; C; O; C*Ag*O; AgO:C; O2; Ag2O

L3 ANSWER 55 OF 61 INSPEC (C) 2006 IEE on STN

AN 2003:7606672 INSPEC DN A2003-12-7320M-001

TI Optical transmittance study of ***silver*** ***particles*** formed by AgOx thermal decomposition

AU Shima, T.; Tominaga, J. (Lab. for Adv. Opt. Technol. (Laotech), Nat. Inst. of Adv. Ind. Sci. & Technol. (AIST), Tsukuba, Japan)

SO Journal of Vacuum Science & Technology A (Vacuum, Surfaces, and Films) (May 2003), vol.21, no.3, p. 634-7, 16 refs.
CODEN: JVTAD6, ISSN: 0734-2101
SICI: 0734-2101(200305)21:3L.634:OTSS;1-X
Published by: AIP for American Vacuum Soc, USA

DT Journal

TC Experimental

CY United States

LA English

AB ***Silver*** oxide (AgOx) thin films were found to exhibit localized surface plasmon resonance absorption when they were heated above the decomposition temperature. The resonance absorption for annealed AgO was obvious with the film thickness of 5 nm, and it became weak at 15 nm. Atomic force microscope images of a 15 nm film have shown that various-size ***particles*** (diameter in lateral direction: 100-600 nm) are dispersed after annealing at 600.degree.C. Similar optical and morphological properties were obtained with the oxygen composition ratio in the range of 33-48 at. % (i.e., Ag2O and AgO). AgOx film with about 15 nm thickness is mostly used in super-resolutional ***near*** - ***field*** structure (super- ***RENS***) when combined with an ***optical*** ***disk*** for the readout of small marks beyond the diffraction limit. The results did not show, however, any evidence that the absorption properties and the readout process of super- ***RENS*** disk are well correlated

CC A7320M Collective excitations (surface states); A7865E Optical properties

of metals and metallic alloys (thin films/low-dimensional structures); A7840K Visible and ultraviolet spectra of metals, semimetals, and alloys; A6146 Structure of solid clusters, nanoparticles, and nanostructured materials; A6170A Annealing processes; A8230L Decomposition reactions (pyrolysis, dissociation, and group ejection)

CT annealing; atomic force microscopy; light transmission; nanoparticles; pyrolysis; ***silver*** ; ***silver*** compounds; surface plasmon resonance; visible spectra

ST optical transmittance; AgOx thermal decomposition; Ag particles; localized surface plasmon resonance absorption; annealed AgO; atomic force microscope images; annealing; various size particles; morphological properties; super-resolutional near-field structure; 15 nm; 5 nm; 100 to 600 nm; 600 C; AgOx; Ag

CHI AgO bin, Ag bin, O bin; Ag el

PHP size 1.5E-08 m; size 5.0E-09 m; size 1.0E-07 to 6.0E-07 m; temperature 8.73E+02 K

ET Ag*O; AgO; Ag cp; cp; O cp; O; Ag; AgOx; C; Ag2O

L3 ANSWER 56 OF 61 INSPEC (C) 2006 IEE on STN

AN 2003:7562673 INSPEC DN A2003-09-4280T-001; B2003-04-4120-024

TI Rigid bubble pit formation and huge signal enhancement in ***super*** - ***resolution*** ***near*** - ***field*** structure disk with ***platinum*** -oxide layer

AU Kikukawa, T.; (Inf. Technol. Res. Center, TDK Corp., Nagano, Japan), Nakano, T.; Shima, T.; Tominaga, J.

SO Applied Physics Letters (16 Dec. 2002), vol.81, no.25, p. 4697-9, 17 refs.
CODEN: APPLAB, ISSN: 0003-6951
SICI: 0003-6951(20021216)81:25L.4697:RBFH;1-W
Price: 01/03/6951/2002/81(25)/4697(3)/$19.00
Doc.No.: S0003-6951(02)00150-X
Published by: AIP, USA

DT Journal

TC Practical; Theoretical

CY United States

LA English

AB Huge signal enhancement was observed by a ***super*** - ***resolution*** ***near*** - ***field*** structure disk with a ***platinum*** -oxide layer. The carrier-to-noise ratio of 200-nm-mark trains reached 46.1 dB, and 42.3 dB was obtained even at 150-nm-mark trains. The sizes of the marks were one-fifth to one-seventh of the laser spot diameter of the readout system. The cross section of the mark trains was also observed by transmission electron microscopy. It was confirmed that 200-nm-size bubble pits were rigidly formed in good separation and 20-nm- ***platinum*** ***particles*** precipitated inside the bubble. The computer-simulation based on the model supported the huge signal enhancement

CC A4280T Optical storage and retrieval; A0260 Numerical approximation and analysis; B4120 Optical storage and retrieval; B0290Z Other numerical methods

CT finite difference time-domain analysis; ***optical*** ***disc*** storage; ***platinum*** compounds; pyrolysis; transmission electron microscopy

ST rigid bubble pit formation; huge signal enhancement; superresolution near-field structure disk; platinum-oxide layer; carrier-to-noise ratio; mark trains; transmission electron microscopy; finite-differential time-domain computer-simulation model; optical near-field recording; 20 nm; 200 nm; PtO2

CHI PtO2 int, O2 int, Pt int, O int, PtO2 bin, O2 bin, Pt bin, O bin

PHP size 2.0E-08 m; size 2.0E-07 m

ET O; Pt; O*Pt; PtO; Pt cp; cp; O cp; B

L3 ANSWER 57 OF 61 INSPEC (C) 2006 IEE on STN

AN 2003:7555262 INSPEC DN A2003-08-7570-005; B2003-04-3120B-033

TI Magnetic lithography using a flexible master: a method for instantaneous magnetic recording on media surfaces with flatness imperfections

AU Bandic, Z.Z.; Xu, H.; Albrecht, T.R. (IBM Almaden Res. Center, San Jose, CA, USA)

SO Applied Physics Letters (6 Jan. 2003), vol.82, no.1, p. 145-7, 14 refs.
CODEN: APPLAB, ISSN: 0003-6951
SICI: 0003-6951(20030106)82:1L.145:MLUF;1-Y
Price: 01/03/6951/2003/82(1)/145(3)/$19.00

Published by: AIP, USA
DT Journal
TC Practical; Experimental
CY United States
LA English
AB A method for instantaneous parallel recording on magnetic media using a flexible master has been developed. Magnetic lithography (qualitatively analogous to optical lithography) transfers information from a patterned magnetic ***mask*** (analog of ***optical*** photomask) to magnetic ***media*** (analog of photoresist). The ***mask*** consists of patterned soft magnetic material (FeNiCo, FeCo) on a flexible polyethylene tetraphthalate (PET) substrate. When uniformly magnetized media is brought into intimate contact with the magnetic ***mask*** , an externally applied magnetic field selectively changes the magnetic orientation in the areas not covered with the soft magnetic material. Imperfect flatness or the presence of ***particular*** contaminants can result in local loss of intimate contact between the master and media, resulting in loss of resolution of submicron features in the transferred magnetic pattern. A flexible master, held against the media via an applied pressure, offers superior compliance to imperfections, even at relatively small applied pressures. We fabricated samples of submicron patterned FeCo and FeNiCo magnetic ***masks*** , and successfully transferred patterns to hard disk CrPtCo-based magnetic media. The details of the method, including fabrication of the magnetic ***mask*** on flexible PET substrates, physics of the magnetic lithography pattern transfer, and magnetic force microscopy images of the magnetic transition patterns are reported
CC A7570A Magnetic properties of monolayers and overlayers; A7560E Magnetization curves, hysteresis, Barkhausen and related effects; A7550S Magnetic recording materials; A0779 Scanning probe microscopy and related techniques; B3120B Magnetic recording
CT chromium alloys; cobalt alloys; hard discs; iron alloys; lithography; magnetic force microscopy; magnetic recording; magnetic thin films; magnetisation; nickel alloys; ***platinum*** alloys
ST magnetic lithography; flexible master; magnetic recording; media surfaces; flatness imperfections; instantaneous parallel recording; magnetic media; patterned magnetic mask; patterned soft magnetic material; flexible polyethylene tetraphthalate substrate; externally applied magnetic field; magnetic orientation; particular contaminants; loss of resolution; FeCo; FeNiCo; magnetic masks; hard disk CrPtCo-based magnetic media; pattern transfer; magnetic force microscopy; magnetic transition patterns
CHI FeNiCo sur, Co sur, Fe sur, Ni sur, FeNiCo ss, Co ss, Fe ss, Ni ss; FeCo sur, Co sur, Fe sur, FeCo bin, Co bin, Fe bin
ET Co*Ni; Co sy 2; sy 2; Ni sy 2; NiCo; Ni cp; cp; Co cp; Co*Cr*Pt; Co sy 3; sy 3; Cr sy 3; Pt sy 3; CrPtCo; Cr cp; Pt cp; Co; Fe; Ni; Co*Fe*Ni; Fe sy 3; Ni sy 3; FeNiCo; Fe cp; Co*Fe; Fe sy 2; FeCo

L3 ANSWER 58 OF 61 INSPEC (C) 2006 IEE on STN
AN 2003:7492460 INSPEC DN B2003-02-4120-162; C2003-02-5320K-106
TI Recording and readout mechanisms of ***super*** - ***resolution*** ***near*** - ***field*** structure disc with ***silver*** oxide layer
AU Kikukawa, T.; (Inf. Technol. Res. Center, TDK Corp., Nagano, Japan), Tachibana, A.; Fuji, H.; Tominaga, J.
SO 2002 International Symposium on Optical Memory and Optical Data Storage Topical Meeting. Joint International Symposium. Technical Digest. Postdeadline Papers (Cat.No.02EX552), 2002, p. 45-7 of (xiii+439+ii+70 suppl.) pp., 2 refs.
ISBN: 0 7803 7379 0
Price: 0-7803-7379-0/02/$17.00
Published by: IEEE, Piscataway, NJ, USA
Conference: 2002 International Symposium on Optical Memory and Optical Data Storage Topical Meeting. Joint International Symposium on Optical Memory and Optical Data Storage 2002. Technical Digest, Waikoloa, HI, USA, 7-11 July 2002
Sponsor(s): IEEE/Lasers & Electro-Opt. Soc.; OSA - Opt. Soc. America; SPIE - Int. Soc. Opt. Eng.; JSAP - Japan Soc. Appl. Phys.; MSJ - Magnetics Soc. Japan; OITDA - Optoelectron. Ind. & Technol. Dev. Assoc.; IEICE; Chemical Soc. Japan; Inf. Process. Soc. Japan; Inst. Electr. Eng. Japan; Inst. Image Inf. & Telev. Eng.; Japan Soc. Precision Eng.; Laser Soc. Japan

DT Conference; Conference Article
TC Practical; Experimental
CY United States
LA English
AB Several technologies to increase the densities of ***optical*** ***discs*** have been proposed. Among them, the ***super*** - ***resolution*** ***near*** - ***field*** structure (***Super*** - ***RENS***) technique (J. Tominaga et al., Appl. Phys. Lett. vol. 73, p. 2078, 1998; H. Fuji et al., Jpn. J. Appl. Phys. vol. 39, p. 980, 2000) is attractive because it satisfies both super-high-density recording/readout and removability at the same time. In this study, we have directly observed recorded and readout states of Super- ***RENS*** with AgOx layer by use of transmission electron microscopy (TEM) for the first time. We also have found that the recording and readout mechanisms are different from those which were explained by the terms of crystallization recording and reversible precipitation of ***Ag*** ***particles*** in an AgOx matrix
CC B4120 Optical storage and retrieval; B4110 Optical materials; B4190F Optical coatings and filters; C5320K Optical storage
CT ***optical*** ***disc*** storage; optical films; ***silver*** compounds; transmission electron microscopy
ST recording mechanisms; readout mechanisms; super-resolution near-field structure disc; silver oxide layer; optical disc density; Super-RENS technique; super-high-density recording/readout; removability; recorded states; readout states; transmission electron microscopy; TEM; crystallization recording; reversible precipitation; Ag particles; AgOx layer; AgO
CHI AgO int, Ag int, O int, AgO bin, Ag bin, O bin
ET O; Ag; Ag*O; AgO; Ag cp; cp; O cp; J; H; AgOx

L3 ANSWER 59 OF 61 INSPEC (C) 2006 IEE on STN
AN 2003:7492327 INSPEC DN A2003-03-4280T-055; B2003-02-4120-075
TI Functional structures of AgOx thin-film for ***near*** - ***field*** recording
AU Fu Han Ho; Hsun Hao Chang; Yu-Hsaun Lin; Din Ping Tsai; (Dept. of Phys., Nat. Taiwan Univ., Taipei, Taiwan), Bing-Mau Chen; Shyh-Yeu Wang
SO 2002 International Symposium on Optical Memory and Optical Data Storage Topical Meeting. Joint International Symposium. Technical Digest (Cat.No.02EX552), 2002, p. 183-5 of (xiii+439+ii+70 suppl.) pp., 8 refs.
ISBN: 0 7803 7379 0
Price: 0-7803-7379-0/02/$17.00
Published by: IEEE, Piscataway, NJ, USA
Conference: 2002 International Symposium on Optical Memory and Optical Data Storage Topical Meeting. Joint International Symposium on Optical Memory and Optical Data Storage 2002. Technical Digest, Waikoloa, HI, USA, 7-11 July 2002
Sponsor(s): IEEE/Lasers & Electro-Opt. Soc.; OSA - Opt. Soc. America; SPIE - Int. Soc. Opt. Eng.; JSAP - Japan Soc. Appl. Phys.; MSJ - Magnetics Soc. Japan; OITDA - Optoelectron. Ind. & Technol. Dev. Assoc.; IEICE; Chemical Soc. Japan; Inf. Process. Soc. Japan; Inst. Electr. Eng. Japan; Inst. Image Inf. & Telev. Eng.; Japan Soc. Precision Eng.; Laser Soc. Japan
DT Conference; Conference Article
TC Experimental
CY United States
LA English
AB We found two kinds of states in an AgOx film controlled by different laser input powers, and the optical properties of each state have different functions for reading and writing of ***near*** - ***field*** recording. The measurement of a static tester was used to make the sample fix to a ***particular*** state, and the reversible process should be considered as a dynamic process, i. e. rotating. Another interesting application is to produce a matrix (2D periodic structure) of dots or rings with the same size, and by controlling the spacing, i.e., the scattering length, we can control the light absorption spectrum as a filter. The optical properties of AgOx thin film could be varied by proper input laser energy
CC A4280T Optical storage and retrieval; A7865P Optical properties of other inorganic semiconductors and insulators (thin films/low-dimensional structures); B4120 Optical storage and retrieval; B6430H Video recording
CT ***optical*** ***disc*** storage; optical properties; reflectivity; ***silver*** compounds; thin films; video recording

ST AgOx thin-film; near-field recording; laser input power; optical properties; 2D periodic structure; light absorption spectrum control; DVD disk; AgO
CHI AgO int, Ag int, O int, AgO bin, Ag bin, O bin
ET D; O; Ag; Ag*O; AgO; Ag cp; cp; O cp; AgOx

L3 ANSWER 60 OF 61 INSPEC (C) 2006 IEE on STN
AN 2001:6960696 INSPEC DN A2001-15-8745-001
TI Application of laser diagnostic techniques to characterize the spray issued from a pMDI
AU Dunbar, C.A.; Watkins, A.P.; (Thermo-Fluids Div., Dept. of Mech. Eng., Manchester, UK), Miller, J.F.
SO International Journal of Fluid Mechanics Research (1997), vol.24, no.4-6, p. 568-77, 13 refs.
CODEN: FLMREB, ISSN: 1064-2277
SICI: 1064-2277(1997)24:4/6L.568:ALDT;1-S
Price: 1064-2277/97/$5.00
Published by: Begell House, USA
DT Journal
TC Practical; Experimental
CY United States
LA English
AB The pressurized metered-dose inhaler (pNDI) is a compact pressurized spray dispenser designed for the oral inhalation of multiple doses of finely dispersed drug in the treatment of various pulmonary diseases, the most common being asthma. This research was concerned with the experimental investigation of the spray issued from a pMDI and has been motivated by the urgent need to find suitable replacements to the environmentally destructive CFC-based propellants currently used in the device and to further the understanding of the mechanisms of atomization. The experimental work was conducted using 1D phase-Doppler ***particle*** analyzer (PDPA), yielding the most detailed temporal and spatial analysis of the pMDI spray to date. Two formulations were studied to compare the performance of an `ozone-friendly' hydrofluoroalkane propellant against that of a traditional placebo CFC-based mixture. The PDPA analysis was complemented by a visual investigation of the ***near*** -orifice flow ***field*** using ***copper*** laserstrobe microcinematography in an attempt to obtain information on the primary atomization process of the pMDI. This work was conducted in parallel with the theoretical investigation of the spray issued from a pMDI
CC A8745H Haemodynamics, pneumodynamics; A8770G Patient care and treatment; A8760F Optical and laser radiation (medical uses)
CT cinematography; drug delivery systems; ***laser*** applications in ***medicine*** ; pneumodynamics; sprays
ST laser diagnostic techniques; spray; pressurized metered-dose inhaler; compact pressurized spray dispenser; multiple doses oral inhalation; finely dispersed drug; pulmonary diseases; asthma; environmentally destructive CFC-based propellants; atomization; 1D phase-Doppler particle analyzer; temporal analysis; spatial analysis; hydrofluoroalkane propellant; placebo CFC-based mixture; near-orifice flow field; Cu laserstrobe microcinematography
ET D

L3 ANSWER 61 OF 61 INSPEC (C) 2006 IEE on STN
AN 1989:3267715 INSPEC DN A1989-010683
TI A brown dwarf companion as an explanation of the asymmetry in the beta Pictoris disk
AU Whitmire, D.P.; Matese, J.J.; (Dept. of Phys., Southwestern Louisiana Univ., Lafayette, LA, USA), Tomley, L.J.
SO Astronomy and Astrophysics (Sept. 1988), vol.203, no.1, pt.1, p. L13-15, 19 refs.
CODEN: AAEJAF, ISSN: 0004-6361
DT Journal
TC Theoretical
CY Germany, Federal Republic of
LA English
AB The disk in beta Pictoris is observed to be asymmetric with the NE branch longer and brighter than the SW branch. The ***optical*** depth of the ***disk*** implies that the observed ***particles*** would relax to an axisymmetric configuration on a timescale much shorter than the probable age of the system. Thus, the persistence of the asymmetry

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       suggests the existence of a shorter perturbing timescale. A model is
       investigated in which this shorter timescale is associated with the
       eccentricity perturbation timescale of a brown dwarf companion. If the
       observed outer disk edge at .apprxeq.1000    ***AU***    is due to orbital
       instability, the companion's periastron distance is in the range
       1500-1900   ***AU***   , corresponding to a mass range of 0.02-0.08
       MX2299, respectively. The companion's primordial inclination and
       eccentricity are statistically stable from perturbations by passing field
       stars over the lifetime of the system. Brown dwarfs in the above mass
       range are potentially observable in the near IR at .beta. Pics distance
CC     A9720G Main-sequence: intermediate type A and F stars; A9720J
       Main-sequence: late-type stars (G, K, and M); A9780 Binary and multiple
       stars; A9710F Circumstellar shells and expanding envelopes; A9710N
       Stellar masses
CT     binary stars; celestial mechanics; circumstellar shells; dwarf stars;
       stars; stellar mass
ST     circumstellar disk asymmetry; disk relaxation time; AS V star; disk age;
       outer disk edge location; orbital eccentricity statistical stability;
       near-IR source; field stars perturbations; Nemesis hypothesis; brown
       dwarf companion; beta Pictoris disk; axisymmetric configuration; shorter
       perturbing timescale; eccentricity perturbation; orbital instability;
       companion's periastron distance; primordial inclination; passing field
       stars; 0.02 to 0.08 Msol; 500 Myr; 8E7 yr; 300 Tm; 225 to 285 Tm
PHP    stellar mass 2.0E-02 to 8.0E-02 Msol; age 5.0E+08 yr; time 2.5E+15 s;
       size 3.0E+14 m; distance 2.25E+14 to 2.85E+14  m
ET     V


=> s ((gold or au or ag or silver or platinum or pt or cu or copper)(10a)(dispers? or sputter?))(2
L4          5945 ((GOLD OR AU OR AG OR SILVER OR PLATINUM OR PT OR CU OR COPPER)(
                 10A)(DISPERS? OR SPUTTER?))(25A)(DIELECTIRC OR SILICA OR SILICON
                 OR ALUMINUM OR ALN OR SIO2)

=> s ((gold or au or ag or silver or platinum or pt or cu or copper)(10a)(dispers? or sputter?))(2
L5          7716 ((GOLD OR AU OR AG OR SILVER OR PLATINUM OR PT OR CU OR COPPER)(
                 10A)(DISPERS? OR SPUTTER?))(25A)(DIELECTRIC OR SILICA OR SILICON
                 OR ALUMINUM OR ALN OR SIO2)

=> d his

     (FILE 'HOME' ENTERED AT 16:35:09 ON 20 MAR 2006)

     FILE 'CAPLUS, INSPEC' ENTERED AT 16:35:18 ON 20 MAR 2006
L1       182532 S ((NEAR(3A)FIELD) OR MASK OR MASKING OR RENS OR SUPERRESOLUTIO
L2         1842 S ((GOLD OR AU OR AG OR SILVER OR PLATINUM OR PT OR CU OR COPPE
L3           61 S L2 AND ((OPTICAL OR LASER OR INFORMATION OR COMPACT)(3A)(DISK
L4         5945 S ((GOLD OR AU OR AG OR SILVER OR PLATINUM OR PT OR CU OR COPPE
L5         7716 S ((GOLD OR AU OR AG OR SILVER OR PLATINUM OR PT OR CU OR COPPE

=> s l1 and l5
L6          126 L1 AND L5

=> s l6 and ((optical or laser or information or compact)(3a)(disk or disc or med?))
L7            1 L6 AND ((OPTICAL OR LASER OR INFORMATION OR COMPACT)(3A)(DISK
                OR DISC OR MED?))

=> d al
'AL' IS NOT A VALID FORMAT FOR FILE 'CAPLUS'

The following are valid formats:

ABS --------- GI and AB
ALL --------- BIB, AB, IND, RE
APPS -------- AI, PRAI
BIB --------- AN, plus Bibliographic Data and PI table (default)
CAN --------- List of CA abstract numbers without answer numbers
CBIB -------- AN, plus Compressed Bibliographic Data
CLASS ------- IPC, NCL, ECLA, FTERM
DALL -------- ALL, delimited (end of each field identified)
DMAX -------- MAX, delimited for post-processing
FAM --------- AN, PI and PRAI in table, plus Patent Family data
FBIB -------- AN, BIB, plus Patent FAM
```

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IND --------- Indexing data
IPC --------- International Patent Classifications
MAX --------- ALL, plus Patent FAM, RE
PATS -------- PI, SO
SAM --------- CC, SX, TI, ST, IT
SCAN -------- CC, SX, TI, ST, IT (random display, no answer numbers;
              SCAN must be entered on the same line as the DISPLAY,
              e.g., D SCAN or DISPLAY SCAN)
STD --------- BIB, CLASS

IABS -------- ABS, indented with text labels
IALL -------- ALL, indented with text labels
IBIB -------- BIB, indented with text labels
IMAX -------- MAX, indented with text labels
ISTD -------- STD, indented with text labels

OBIB -------- AN, plus Bibliographic Data (original)
OIBIB ------- OBIB, indented with text labels

SBIB -------- BIB, no citations
SIBIB ------- IBIB, no citations

HIT --------- Fields containing hit terms
HITIND ------ IC, ICA, ICI, NCL, CC and index field (ST and IT)
              containing hit terms
HITRN ------- HIT RN and its text modification
HITSTR ------ HIT RN, its text modification, its CA index name, and
              its structure diagram
HITSEQ ------ HIT RN, its text modification, its CA index name, its
              structure diagram, plus NTE and SEQ fields
FHITSTR ----- First HIT RN, its text modification, its CA index name, and
              its structure diagram
FHITSEQ ----- First HIT RN, its text modification, its CA index name, its
              structure diagram, plus NTE and SEQ fields
KWIC -------- Hit term plus 20 words on either side
OCC --------- Number of occurrence of hit term and field in which it occurs

To display a particular field or fields, enter the display field
codes.  For a list of the display field codes, enter HELP DFIELDS at
an arrow prompt (=>).  Examples of formats include: TI; TI,AU; BIB,ST;
TI,IND; TI,SO.  You may specify the format fields in any order and the
information will be displayed in the same order as the format
specification.

All of the formats (except for SAM, SCAN, HIT, HITIND, HITRN, HITSTR,
FHITSTR, HITSEQ, FHITSEQ, KWIC, and OCC) may be used with DISPLAY ACC
to view a specified Accession Number.
ENTER DISPLAY FORMAT (BIB):d his
'D' IS NOT A VALID FORMAT FOR FILE 'CAPLUS'

The following are valid formats:

ABS --------- GI and AB
ALL --------- BIB, AB, IND, RE
APPS -------- AI, PRAI
BIB --------- AN, plus Bibliographic Data and PI table (default)
CAN --------- List of CA abstract numbers without answer numbers
CBIB -------- AN, plus Compressed Bibliographic Data
CLASS ------- IPC, NCL, ECLA, FTERM
DALL -------- ALL, delimited (end of each field identified)
DMAX -------- MAX, delimited for post-processing
FAM --------- AN, PI and PRAI in table, plus Patent Family data
FBIB -------- AN, BIB, plus Patent FAM
```

```
IND --------- Indexing data
IPC --------- International Patent Classifications
MAX --------- ALL, plus Patent FAM, RE
PATS -------- PI, SO
SAM --------- CC, SX, TI, ST, IT
SCAN -------- CC, SX, TI, ST, IT (random display, no answer numbers;
              SCAN must be entered on the same line as the DISPLAY,
              e.g., D SCAN or DISPLAY SCAN)
STD --------- BIB, CLASS
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IABS -------- ABS, indented with text labels
IALL -------- ALL, indented with text labels
IBIB -------- BIB, indented with text labels
IMAX -------- MAX, indented with text labels
ISTD -------- STD, indented with text labels

OBIB -------- AN, plus Bibliographic Data (original)
OIBIB ------- OBIB, indented with text labels

SBIB -------- BIB, no citations
SIBIB ------- IBIB, no citations

HIT --------- Fields containing hit terms
HITIND ------ IC, ICA, ICI, NCL, CC and index field (ST and IT)
              containing hit terms
HITRN ------- HIT RN and its text modification
HITSTR ------ HIT RN, its text modification, its CA index name, and
              its structure diagram
HITSEQ ------ HIT RN, its text modification, its CA index name, its
              structure diagram, plus NTE and SEQ fields
FHITSTR ----- First HIT RN, its text modification, its CA index name, and
              its structure diagram
FHITSEQ ----- First HIT RN, its text modification, its CA index name, its
              structure diagram, plus NTE and SEQ fields
KWIC -------- Hit term plus 20 words on either side
OCC --------- Number of occurrence of hit term and field in which it occurs

To display a particular field or fields, enter the display field
codes.  For a list of the display field codes, enter HELP DFIELDS at
an arrow prompt (=>).  Examples of formats include: TI; TI,AU; BIB,ST;
TI,IND; TI,SO.  You may specify the format fields in any order and the
information will be displayed in the same order as the format
specification.

All of the formats (except for SAM, SCAN, HIT, HITIND, HITRN, HITSTR,
FHITSTR, HITSEQ, FHITSEQ, KWIC, and OCC) may be used with DISPLAY ACC
to view a specified Accession Number.
ENTER DISPLAY FORMAT (BIB):d kwic
'D' IS NOT A VALID FORMAT FOR FILE 'CAPLUS'

The following are valid formats:

ABS --------- GI and AB
ALL --------- BIB, AB, IND, RE
APPS -------- AI, PRAI
BIB --------- AN, plus Bibliographic Data and PI table (default)
CAN --------- List of CA abstract numbers without answer numbers
CBIB -------- AN, plus Compressed Bibliographic Data
CLASS ------- IPC, NCL, ECLA, FTERM
DALL -------- ALL, delimited (end of each field identified)
DMAX -------- MAX, delimited for post-processing
FAM --------- AN, PI and PRAI in table, plus Patent Family data
FBIB -------- AN, BIB, plus Patent FAM
IND --------- Indexing data
IPC --------- International Patent Classifications
MAX --------- ALL, plus Patent FAM, RE
PATS -------- PI, SO
SAM --------- CC, SX, TI, ST, IT
SCAN -------- CC, SX, TI, ST, IT (random display, no answer numbers;
              SCAN must be entered on the same line as the DISPLAY,
              e.g., D SCAN or DISPLAY SCAN)
STD --------- BIB, CLASS

IABS -------- ABS, indented with text labels
IALL -------- ALL, indented with text labels
IBIB -------- BIB, indented with text labels
IMAX -------- MAX, indented with text labels
ISTD -------- STD, indented with text labels

OBIB -------- AN, plus Bibliographic Data (original)
OIBIB ------- OBIB, indented with text labels
```

```
SBIB -------- BIB, no citations
SIBIB ------- IBIB, no citations

HIT --------- Fields containing hit terms
HITIND ------ IC, ICA, ICI, NCL, CC and index field (ST and IT)
              containing hit terms
HITRN ------- HIT RN and its text modification
HITSTR ------ HIT RN, its text modification, its CA index name, and
              its structure diagram
HITSEQ ------ HIT RN, its text modification, its CA index name, its
              structure diagram, plus NTE and SEQ fields
FHITSTR ----- First HIT RN, its text modification, its CA index name, and
              its structure diagram
FHITSEQ ----- First HIT RN, its text modification, its CA index name, its
              structure diagram, plus NTE and SEQ fields
KWIC -------- Hit term plus 20 words on either side
OCC --------- Number of occurrence of hit term and field in which it occurs

To display a particular field or fields, enter the display field
codes.  For a list of the display field codes, enter HELP DFIELDS at
an arrow prompt (=>).  Examples of formats include: TI; TI,AU; BIB,ST;
TI,IND; TI,SO.  You may specify the format fields in any order and the
information will be displayed in the same order as the format
specification.

All of the formats (except for SAM, SCAN, HIT, HITIND, HITRN, HITSTR,
FHITSTR, HITSEQ, FHITSEQ, KWIC, and OCC) may be used with DISPLAY ACC
to view a specified Accession Number.
ENTER DISPLAY FORMAT (BIB):bib

L7   ANSWER 1 OF 1  CAPLUS  COPYRIGHT 2006 ACS on STN
AN   2003:434875  CAPLUS
DN   139:14722
TI   Optical devices having highly dispersive metallo-dielec. micropatterns
IN   Polman, Albert; Strohhoefer, Christof; Van Blaaderen, Alfons
PA   BTG International Limited, UK
SO   PCT Int. Appl., 33 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
FAN.CNT 1
     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
     ---------------     ----   --------    --------------------   --------
PI   WO 2003046657        A2    20030605    WO 2002-GB5283         20021125
     WO 2003046657        A3    20030710
         W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
             LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,
             PL, PT, RO, RU, SC, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT,
             TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
         RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,
             KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,
             FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF,
             CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
PRAI GB 2001-28147        A     20011123


=> s ((gold or au or ag or silver or platinum or pt or cu or copper) and (dispers? or sputter?)) a
L8        37902 ((GOLD OR AU OR AG OR SILVER OR PLATINUM OR PT OR CU OR COPPER)
                AND (DISPERS? OR SPUTTER?)) AND (DIELECTRIC OR SILICA OR SILICON
                OR ALUMINUM OR ALN OR SIO2)

=> s l1 and l8
L9         1214 L1 AND L8

=> s l9 and ((optical or laser or information or compact)(3a)(disk or disc or med?))
L10          23 L9 AND ((OPTICAL OR LASER OR INFORMATION OR COMPACT)(3A)(DISK
                OR DISC OR MED?))

=> s l10 not l3
```

L11 13 L10 NOT L3

=> d all 1-13

L11 ANSWER 1 OF 13 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2005:728353 CAPLUS
DN 143:375145
ED Entered STN: 11 Aug 2005
TI Optical properties of metal-oxide films in super- ***RENS***
AU Liu, Qian; Fukaya, Toshio; Tominaga, Junji; Iwanabe, Yasuhiko; Shima, Takayuki
CS Center for Applied Near-Field Optics Research (CAN-FOR), National Institute of Advanced Industrial Science and Technology (AIST), Ibaraki, 305-8562, Japan
SO Japanese Journal of Applied Physics, Part 1: Regular Papers, Brief Communications & Review Papers (2005), 44(7A), 5156-5163
CODEN: JAPNDE
PB Japan Society of Applied Physics
DT Journal
LA English
CC 73-2 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
AB The property of the optical transmittance and reflectance induced by structural changes in AgOx, PtOx and PdOx thin films, which are materials of key layer in ***superresoln*** . ***near*** - ***field*** structure (super- ***RENS***) ***optical*** ***disk*** , is investigated by Z-scan measurements and microscopic observations. The light intensity features of the transmittance and reflectance are clarified. Laser-irradiated decompn. of the noble metal oxides in the films and their decompn. thresholds are examd. The optical properties of the films result from bubbles induced by the chem. decompn. of the oxides and the metallic nanoparticles ***dispersed*** in the bubbles. The light-induced thermal features, reversible and irreversible properties, optical responses corresponding to the decompn. of the oxides, the influence on readout stability, and the signal intensity of the metal-oxide (MeO) super- ***RENS*** disks are also discussed for MeO films.
ST optical property metal oxide film super ***RENS*** ***optical*** ***disk***
IT Bubbles
(deformation induced by O2 gas; optical properties of metal-oxide films in super- ***RENS***)
IT Transition metal oxides
RL: DEV (Device component use); USES (Uses)
(noble metal oxides; optical properties of metal-oxide films in super- ***RENS***)
IT Thermal decomposition
(of metal oxides; optical properties of metal-oxide films in super- ***RENS***)
IT Light scattering
Optical damage threshold
Optical ***disks***
Optical recording
Optical reflection
Optical switching
Optical transmission
(***optical*** properties of metal-oxide films in super- ***RENS***)
IT 1314-98-3, Zinc sulfide (ZnS), uses 7631-86-9, ***Silica*** , uses
RL: DEV (Device component use); USES (Uses)
(***dielec*** . thin film component; optical properties of metal-oxide films in super- ***RENS***)
IT 11113-77-2, Palladium oxide 11113-88-5, ***Silver*** oxide 11129-89-8, ***Platinum*** oxide
RL: DEV (Device component use); USES (Uses)
(optical properties of metal-oxide films in super- ***RENS***)
RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

(1) Betzig, E; Science 1991, V251, P1468
(2) Buechel, D; Appl Phys Lett 2001, V79, P620
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(4) Fuji, H; Jpn J Appl Phys 2000, V39, P980 CAPLUS

(5) Fukaya, T; Appl Phys Lett 1999, V75, P3114 CAPLUS
(6) Fukaya, T; J Appl Phys 2001, V89, P6139 CAPLUS
(7) Ho, F; Jpn J Appl Phys 2001, V40, P4101 CAPLUS
(8) Ho, F; Jpn J Appl Phys 2003, V42, P1000 CAPLUS
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(16) Tominaga, J; Appl Phys Lett 1998, V73, P2078 CAPLUS
(17) Tominaga, J; Appl Phys Lett 1999, V75, P151
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(20) Wei, J; Appl Phys Lett 2003, V82, P2607 CAPLUS

L11 ANSWER 2 OF 13 CAPLUS
AN 2005:292500 CAPLUS
DN 142:488344
ED Entered STN: 06 Apr 2005
TI Thermal decomposition of ***sputtered*** thin PtOx layers used in ***super*** - ***resolution*** ***optical*** ***disks***
AU Kolobov, A. V.; Wilhelm, F.; Rogalev, A.; Shima, T.; Tominaga, J.
CS Center for Applied Near-Field Optics Research (CANFOR), National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, 305-8562, Japan
SO Applied Physics Letters (2005), 86(12), 121909/1-121909/3
CODEN: APPLAB; ISSN: 0003-6951
PB American Institute of Physics
DT Journal
LA English
CC 69-3 (Thermodynamics, Thermochemistry, and Thermal Properties)
Section cross-reference(s): 73, 74
AB Decompn. of ***sputtered*** PtOx layers has been studied by x-ray absorption spectroscopy. X-ray absorption fine structure measurements demonstrated that as-deposited films possess a compn. of PtOx (x=1.1-1.7). Upon annealing, the metallic ***platinum*** phase is formed. The formation of the metallic ***Pt*** phase starts at very early stages of the decompn. process. The decompn. is not monotonic and slows down at the final stage. The structure at intermediate stages of decompn. is a mixt. of the starting phase and metallic ***Pt*** .
ST thermal decompn ***sputtered*** ***platinum*** oxide ***optical*** ***disk*** EXAFS XANES
IT Valence
(***Pt*** ; thermal decompn. of ***sputtered*** thin PtOx layers used in ***super*** - ***resoln*** . ***optical*** ***disks*** studied by x-ray absorption)
IT Coordination number
(av. ***Pt*** -O; thermal decompn. of ***sputtered*** thin PtOx layers used in ***super*** - ***resoln*** . ***optical*** ***disks*** studied by x-ray absorption)
IT Annealing
(redn. by; thermal decompn. of ***sputtered*** thin PtOx layers used in ***super*** - ***resoln*** . ***optical*** ***disks*** studied by x-ray absorption)
IT Films
(***sputter*** -deposited; thermal decompn. of ***sputtered*** thin PtOx layers used in ***super*** - ***resoln*** . ***optical*** ***disks*** studied by x-ray absorption)
IT Bond length
EXAFS spectra
Optical ***disks***
Thermal decomposition
XANES spectra
(thermal decompn. of ***sputtered*** thin PtOx layers used in ***super*** - ***resoln*** . ***optical*** ***disks*** studied by x-ray absorption)
IT Reduction
(thermal; thermal decompn. of ***sputtered*** thin PtOx layers used in ***super*** - ***resoln*** . ***optical*** ***disks***

studied by x-ray absorption)
IT 1314-15-4, ***Platinum*** oxide (PtO2)
RL: PRP (Properties)
(ref.; thermal decompn. of ***sputtered*** thin PtOx layers used in ***super*** - ***resoln*** . ***optical*** ***disks*** studied by x-ray absorption)
IT 1314-98-3, Zinc sulfide, properties 7631-86-9, ***Silica*** , properties
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(thermal decompn. of ***sputtered*** thin PtOx layers used in ***super*** - ***resoln*** . ***optical*** ***disks*** contg.)
IT 583825-88-1, ***Platinum*** oxide (PtO1.6)
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(thermal decompn. of ***sputtered*** thin PtOx layers used in ***super*** - ***resoln*** . ***optical*** ***disks*** studied by x-ray absorption)
IT 7440-06-4, ***Platinum*** , properties
RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)
(thermal decompn. of ***sputtered*** thin PtOx layers used in ***super*** - ***resoln*** . ***optical*** ***disks*** studied by x-ray absorption)
IT 583825-87-0, ***Platinum*** oxide (PtO1.1)
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(thermal decompn. of ***sputtered*** thin PtOx layers used in ***super*** - ***resoln*** . ***optical*** ***disks*** studied by x-ray absorption)
RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE

(1) Aiken, J; J Mol Catal A: Chem 1999, V145, P1 CAPLUS
(2) Ankudinov, A; Phys Rev B 1998, V58, P7565 CAPLUS
(3) Goulon, J; J Synchrotron Radiat 1998, V5, P232 CAPLUS
(4) Graham, G; J Raman Spectrosc 1991, V22, P1 CAPLUS
(5) Kettler, P; Org Process Res Dev 2003, V7, P342 CAPLUS
(6) Kikukawa, T; Appl Phys Lett 2002, V81, P4697 CAPLUS
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(13) Nomura, M; J Synchrotron Radiat 1998, V5, P851 CAPLUS
(14) Saenger, K; J Appl Phys 1999, V86, P6084 CAPLUS
(15) Shima, T; Jpn J Appl Phys, Part 1 2003, V42, P3479 CAPLUS
(16) Yoshida, H; J Synchrotron Radiat 1999, V6, P471 CAPLUS

L11 ANSWER 3 OF 13 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:605930 CAPLUS
DN 141:148180
ED Entered STN: 29 Jul 2004
TI Optical information recording device and manufacture of medium therefor and flat probe array
IN Fukuda, Hiroaki
PA Ricoh Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 16 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G11B007-135
ICS G01N013-10; G01N013-14; G11B007-22; G11B007-24; G12B021-06
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004213702	A2	20040729	JP 2002-378234	20021226
PRAI	JP 2002-378234		20021226		

CLASS

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 PATENT NO.      CLASS  PATENT FAMILY CLASSIFICATION CODES
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 JP 2004213702   ICM    G11B007-135
                 ICS    G01N013-10; G01N013-14; G11B007-22; G11B007-24;
                        G12B021-06
                 IPCI   G11B0007-135 [ICM,7]; G01N0013-10 [ICS,7]; G01N0013-14
                        [ICS,7]; G11B0007-22 [ICS,7]; G11B0007-24 [ICS,7];
                        G12B0021-06 [ICS,7]
                 FTERM  5D029/JA01; 5D029/JA04; 5D029/JB08; 5D029/JB13;
                        5D029/LA12; 5D029/LA13; 5D029/LA16; 5D029/LC11;
                        5D119/AA11; 5D119/AA13; 5D119/AA22; 5D119/BA01;
                        5D119/BB04; 5D119/BB06; 5D119/BB12; 5D119/BB13;
                        5D119/CA06; 5D119/CA20; 5D119/DA01; 5D119/DA05;
                        5D119/EB02; 5D119/FA05; 5D119/JA02; 5D119/JA11;
                        5D119/JA12; 5D119/JA32; 5D119/JA34; 5D119/JA43;
                        5D119/MA06; 5D119/NA05; 5D789/AA11; 5D789/AA13;
                        5D789/AA22; 5D789/BA01; 5D789/BB04; 5D789/BB06;
                        5D789/BB12; 5D789/BB13; 5D789/CA06; 5D789/CA20;
                        5D789/DA01; 5D789/DA05; 5D789/EB02; 5D789/FA05;
                        5D789/JA02; 5D789/JA11; 5D789/JA12; 5D789/JA32;
                        5D789/JA34; 5D789/JA43; 5D789/MA06; 5D789/NA05
```

AB The invention relates to the optical information recording device capable of detecting signals at high efficiency by using the ***near*** ***field*** effect of light for the regeneration of high d. optical information which is not limitted by the wavelength of the light.

ST ***optical*** ***information*** recording device ***medium***

IT Vapor deposition process
  (chem.; optical information recording device and flat probe array)

IT Optical recording materials
  Sputtering
  (optical information recording device and flat probe array)

IT Telluride glasses
  RL: DEV (Device component use); USES (Uses)
  (optical information recording device and flat probe array)

IT 1314-98-3, Zinc sulfide, uses 7631-86-9, ***Silica*** , uses
  RL: DEV (Device component use); USES (Uses)
  (optical information recording device and flat probe array)

IT 7782-40-3, Diamond, processes
  RL: DEV (Device component use); EPR (Engineering process); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
  (optical information recording device and flat probe array)

IT 7440-22-4, ***Silver*** , uses 7440-36-0, Antimony, uses 7440-74-6, Indium, uses
  RL: DEV (Device component use); USES (Uses)
  (telluride glass; optical information recording device and flat probe array)

L11 ANSWER 4 OF 13 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:218959 CAPLUS
DN 140:262534
ED Entered STN: 19 Mar 2004
TI Sandblast-resistant ***masks*** provided in thin-film deposition process and apparatus
IN Oda, Yoshifumi
PA Shibaura Mechatronics Corporation, Japan
SO Jpn. Kokai Tokkyo Koho, 12 pp.
  CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C23C014-04
  ICS C23C014-34
CC 76-3 (Electric Phenomena)
  Section cross-reference(s): 56, 74
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004084043	A2	20040318	JP 2002-249986	20020829
PRAI	JP 2002-249986		20020829		

CLASS

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 PATENT NO.      CLASS  PATENT FAMILY CLASSIFICATION CODES
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JP 2004084043 ICM C23C014-04
ICS C23C014-34
IPCI C23C0014-04 [ICM,7]; C23C0014-34 [ICS,7]
FTERM 4K029/BC00; 4K029/BD00; 4K029/CA05; 4K029/HA02; 4K029/HA04

AB The title ***sputtering*** ***masks*** withstanding against sandblasting in cleaning deposits employ a thermal conductive metal for their main portion and a hard metal on their edge potions to avoid deformation. The hard metal for the edges may be stainless steel, Ti, W, Ta, Mo, or their alloys. The thermal conductive metal for the main body may be ***Cu*** for effective heat releasing of ***sputtering*** heat from polycarbonate substrates. The use of the hard metal on their edge potions effectively prevents deformation of the ***masks*** in sandblast cleaning. The ***sputtering*** of the thin-film deposition process may be applicable to Si thin-film deposition in manufg. DVD devices.

ST stainless steel ***sputtering*** ***mask*** sandblast resistance thin film deposition; hard metal ***sputtering*** ***mask*** sandblast resistance thin film deposition

IT ***Optical*** ***disks***
(DVD, manuf. of; sandblast-resistant ***masks*** provided in thin-film deposition process and app.)

IT Sandblasting
(for removal of deposits; sandblast-resistant ***masks*** provided in thin-film deposition process and app.)

IT Coating materials
(***masking*** , ***sputtering*** ***masks*** ; sandblast-resistant ***masks*** provided in thin-film deposition process and app.)

IT ***Sputtering***
(***masks*** for; sandblast-resistant ***masks*** provided in thin-film deposition process and app.)

IT Deformation (mechanical)
(of ***masks*** , prevention; sandblast-resistant ***masks*** provided in thin-film deposition process and app.)

IT Thermal conductors
(***sputtering*** ***masks*** , main portions; sandblast-resistant ***masks*** provided in thin-film deposition process and app.)

IT Polycarbonates, properties
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(substrate, ***sputtering*** on, for DVD; sandblast-resistant ***masks*** provided in thin-film deposition process and app.)

IT Vapor deposition process
(thin-film; sandblast-resistant ***masks*** provided in thin-film deposition process and app.)

IT 12597-68-1, Stainless steel, properties
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(sandblast-resistant ***masks*** provided in thin-film deposition process and app.)

IT 7439-98-7, Molybdenum, properties 7440-25-7, Tantalum, properties 7440-32-6, Titanium, properties 7440-33-7, Tungsten, properties
RL: MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(***sputtering*** ***mask*** edge portions; sandblast-resistant ***masks*** provided in thin-film deposition process and app.)

IT 7440-50-8, ***Copper*** , properties
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(***sputtering*** ***mask*** main body; sandblast-resistant ***masks*** provided in thin-film deposition process and app.)

IT 7440-21-3P, ***Silicon*** , properties
RL: PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation)
(thin film ***sputtering*** , ***masks*** for; sandblast-resistant ***masks*** provided in thin-film deposition process and app.)

L11 ANSWER 5 OF 13 CAPLUS
AN 2003:910297 CAPLUS
DN 139:388568
ED Entered STN: 21 Nov 2003
TI Apparatus and method for manufacture of ***optical*** recording

media
IN   Shirasagi, Toshihiko
PA   Sony Disc Technology, Inc., Japan
SO   Jpn. Kokai Tokkyo Koho, 13 pp.
     CODEN: JKXXAF
DT   Patent
LA   Japanese
IC   ICM G11B007-26
     ICS G11B007-24
CC   74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003331482	A2	20031121	JP 2002-132466	20020508
PRAI	JP 2002-132466		20020508		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2003331482	ICM	G11B007-26
	ICS	G11B007-24
	IPCI	G11B0007-26 [ICM,7]; G11B0007-24 [ICS,7]

AB   In manuf. of the recording media by (1) injection molding 1st substrates and 2nd substrates, (2) forming 1st film materials as reflection films on data-recorded surfaces of the 1st substrates, and (3) bonding the 2nd substrates with the date-recorded surfaces via adhesive layers, 2nd film materials are formed on bonded surfaces of the 2nd substrates via ***mask*** materials having visible information. In case of forming 2nd film materials as semitransparent films on the data-recorded surfaces of the 2nd substrates, 3rd film materials are formed on bonded surfaces of the 1st substrates via ***mask*** materials having visible information before formation of the 1st films. The recording media may have protective layers on the data-recorded surfaces of the substrates. The app. has a film-formation app. contg. a detachable ***mask*** material having visible information for forming semitransparent films on substrates both using and without using the ***mask*** materials. DVD-ROMs having visible information are obtained without printing processes.
ST   ***optical*** recording ***medium*** manuf visible ***information*** ; ***disk*** ***optical*** manuf visible ***information*** recorded ***mask*** ; DVD ROM manuf visible information
IT   ***Optical*** ROM ***disks***
       (DVD-ROM; app. and method for manuf. of ***optical*** recording ***media*** having visible ***information***)
IT   ***Sputtering***
       Sputtering devices
       (app. and method for manuf. of ***optical*** recording ***media*** having visible ***information***)
IT   7440-22-4, ***Silver*** , processes 7440-57-5, ***Gold*** , processes
     RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
       (app. and method for manuf. of ***optical*** recording ***media*** having visible ***information***)
IT   7429-90-5, ***Aluminum*** , processes
     RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
       (reflection films; app. and method for manuf. of ***optical*** recording ***media*** having visible ***information***)
IT   7440-21-3, ***Silicon*** , processes
     RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
       (semitransparent films; app. and method for manuf. of ***optical*** recording ***media*** having visible ***information***)

L11 ANSWER 6 OF 13 CAPLUS COPYRIGHT 2006 ACS on STN
AN   2002:363469 CAPLUS
DN   136:377358
ED   Entered STN: 16 May 2002

TI ***Super*** - ***resolution*** readout for magnetooptical disk by optimizing the deposition condition of non-magnetic ***mask*** layer
AU Shima, Takayuki; Kim, Johoo; Fuji, Hiroshi; Atoda, Nobufumi; Tominaga, Junji
CS Laboratory for Advanced Optical Technology (LAOTEC), National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba Central 4, 1-1-1 Higashi, Tsukuba, Ibaraki, 305-8562, Japan
SO Materials Research Society Symposium Proceedings (2001), 674(Applications of Ferromagnetic and Optical Materials, Storage and Magnetoelectronics), V2.2.1-V2.2.7
CODEN: MRSPDH; ISSN: 0272-9172
PB Materials Research Society
DT Journal
LA English
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
AB ***Super*** - ***resoln*** . ***near*** - ***field*** structure (***Super*** - ***RENS***) was prepd. by a heliconwave-plasma ***sputtering*** method to improve the disk property that is combined with a magnetooptical (MO) recording disk. Antimony and ***silver*** -oxide ***mask*** layers were prepd. by the method and refractive indexes were measured. Recording and retrieving of signals beyond the resoln. limit (<370 nm) were achieved for both ***mask*** cases. Attempts to optimize the disk structure were also made using a conventional ***sputtering*** method. The smallest mark size was around 200 nm and the highest carrier-to-noise ratio (CNR) was 30 dB for 300-nm mark and 22 dB for 250-nm, when using a laser wavelength of 780 nm and a numerical aperture of 0.53. It was found that there is a competing ***super*** - ***resoln*** . mechanism besides ***Super*** - ***RENS*** that appears when high readout laser power is applied. This mechanism played rather an important role at least in the mark-size range of 200-370 nm.
ST magnetooptical disk nonmagnetic ***mask*** layer deposition condition effect
IT Magnetic disks
Optical ***disks***
(magnetooptical ***disks*** ; ***super*** - ***resoln*** . readout for magnetooptical disk by optimizing deposition condition of non-magnetic ***mask*** layer)
IT ***Sputtering***
(***super*** - ***resoln*** . readout for magnetooptical disk by optimizing deposition condition of non-magnetic ***mask*** layer)
IT Refractive index
(***super*** - ***resoln*** . readout for magnetooptical disk by optimizing deposition condition of non-magnetic ***mask*** layer in relation to)
IT 125169-67-7, Cobalt 9, iron 71, terbium 20 (atomic)
RL: TEM (Technical or engineered material use); USES (Uses)
(recording layer; ***super*** - ***resoln*** . readout for magnetooptical disk by optimizing deposition condition of non-magnetic ***mask*** layer)
IT 7440-36-0, Antimony, properties 11113-88-5, ***Silver*** oxide
RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(***super*** - ***resoln*** . readout for magnetooptical disk by optimizing deposition condition of non-magnetic ***mask*** layer)
IT 7440-22-4, ***Silver*** , uses 12033-89-5, ***Silicon*** nitride, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(***super*** - ***resoln*** . readout for magnetooptical disk by optimizing deposition condition of non-magnetic ***mask*** layer)
RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Fuji, H; Abstracts of the 8th Joint MMM-intermag Conference 2001, PBE-01
(2) Fuji, H; Jpn J Appl Phys 2000, V39, P980 CAPLUS
(3) Kikukawa, T; Abstracts of the Optical Data Storage Topical Meeting 2001, PTuD1
(4) Kim, J; Appl Phys Lett 2000, V77, P1774 CAPLUS
(5) Kim, J; J Magn Soc Japan 2001, V25, P387
(6) Lannin, J; Phys Rev 1977, VB15, P3863
(7) Renucci, J; Phys Status Solidi 1973, Vb60, P299
(8) Shima, T; J Vac Sci & Technol A (in press)

(9) Silva, T; SPIE Proceedings 1993, V1855, P180 CAPLUS
(10) Tominaga, J; Appl Phys Lett 1998, V73, P2078 CAPLUS
(11) Tominaga, J; Jpn J Appl Phys 2000, V39, P957 CAPLUS
(12) Wang, X; Thin Solid Films 1999, V338, P105

L11 ANSWER 7 OF 13 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2001:302137 CAPLUS
DN 135:114396
ED Entered STN: 29 Apr 2001
TI High-density read-only memory disc with ***super*** ***resolution*** reflective layer
AU Kikukawa, Takashi; Kato, Tatsuya; Shingai, Hiroshi; Utsunomiya, Hajime
CS Data Storage Technology Center, TDK Chikumagawa the 1st. Technical Center, TDK Corporation, Nagano, 385-0009, Japan
SO Japanese Journal of Applied Physics, Part 1: Regular Papers, Short Notes & Review Papers (2001), 40(3B), 1624-1628
CODEN: JAPNDE; ISSN: 0021-4922
PB Japan Society of Applied Physics
DT Journal
LA English
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 73
AB The authors report that ***super*** - ***resoln*** . readout occurred in read-only memory (ROM) disks with very simple materials and structure. By adopting a 15-nm-thick layer of Ge, Si, Mo, and W as a reflective layer, a carrier-to-noise ratio over 40 dB could be obtained from small pits which were below the resoln. limit of optical system. Exptl. and thermal simulation results showed that the ***super*** ***resoln*** . readout phenomenon in the disks is strongly correlated to the film temps. that are reached when a laser spot is irradiated on the films. Signal characterizations suggest that the ***super*** ***resoln*** . readout mechanism of the disks is different from those of conventional ROM and conventional ***super*** - ***resoln*** . ROM disks. The authors have named them Super-ROM disks.
ST read only memory ***disk*** ***optical*** ***super*** ***resoln*** reflection; temp optical reflection read only memory disk ***super*** ***resoln***
IT ***Optical*** ROM ***disks***
Optical reflection
Thermooptical effect
(high-d. read-only memory disk with ***super*** ***resoln*** . reflective layer)
IT Metals, properties
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(reflective layer; high-d. read-only memory disk with ***super*** ***resoln*** . reflective layer)
IT Polycarbonates, uses
RL: DEV (Device component use); USES (Uses)
(substrate; high-d. read-only memory disk with ***super*** ***resoln*** . reflective layer)
IT 12033-89-5, ***silicon*** nitride si3n4, uses
RL: DEV (Device component use); USES (Uses)
(high-d. read-only memory disk with ***super*** ***resoln*** . reflective layer)
IT 7429-90-5, ***Aluminum*** , properties 7439-89-6, Iron, properties 7439-96-5, Manganese, properties 7439-98-7, Molybdenum, properties 7440-02-0, Nickel, properties 7440-03-1, Niobium, properties 7440-05-3, Palladium, properties 7440-06-4, ***Platinum*** , properties 7440-21-3, ***Silicon*** , properties 7440-22-4, ***Silver*** , properties 7440-25-7, Tantalum, properties 7440-31-5, Tin, properties 7440-32-6, Titanium, properties 7440-33-7, Tungsten, properties 7440-44-0, Carbon, properties 7440-47-3, Chromium, properties 7440-48-4, Cobalt, properties 7440-50-8, ***Copper*** , properties 7440-56-4, Germanium, properties 7440-57-5, ***Gold*** , properties 7440-62-2, Vanadium, properties 7440-66-6, Zinc, properties 7440-67-7, Zirconium, properties 7440-69-9, Bismuth, properties 7440-74-6, Indium, properties 13494-80-9, Tellurium, properties
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(reflective layer; high-d. read-only memory disk with ***super*** ***resoln*** . reflective layer)
IT 7727-37-9, Nitrogen, processes

RL: PEP (Physical, engineering or chemical process); PROC (Process)
(***sputtering*** gas mixt. component; high-d. read-only memory disk with ***super*** ***resoln*** . reflective layer)

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

(1) Ariyoshi, T; Jpn J Appl Phys 2000, V39, P4013 CAPLUS
(2) Bouwhuis, G; Appl Opt 1990, V29, P3766
(3) Hatakeyama, M; Jpn J Appl Phys 2000, V39, P752 CAPLUS
(4) Kasami, Y; Jpn J Appl Phys 2000, V39, P756 CAPLUS
(5) Liu, J; Jpn J Appl Phys 1999, V38, P1661 CAPLUS
(6) Nagata, K; Jpn J Appl Phys 1999, V38, P1679 CAPLUS
(7) Shintani, T; Jpn J Appl Phys 1999, V38, P1656 CAPLUS
(8) Tieke, B; Jpn J Appl Phys 2000, V39, P762 CAPLUS
(9) Tominaga, J; Appl Phys Lett 1998, V73, P2078 CAPLUS

L11 ANSWER 8 OF 13 CAPLUS

AN 2000:639135 CAPLUS
DN 133:215528
ED Entered STN: 14 Sep 2000
TI Magneto- ***optical*** recording ***medium*** with ***super*** ***resolution***
IN Hirokane, Junji; Iwata, Noboru; Takahashi, Akira
PA Sharp Kabushiki Kaisha, Japan
SO U.S., 57 pp.
CODEN: USXXAM
DT Patent
LA English
IC ICM G11B005-66
INCL 428336000
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 77
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6117544	A	20000912	US 1999-336094	19990618
	JP 3492525	B2	20040203	JP 1998-173489	19980619
PRAI	JP 1998-173489	A	19980619		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 6117544	ICM	G11B005-66
	INCL	428336000
	IPCI	G11B0005-66 [ICM,7]
	IPCR	G11B0011-00 [I,C]; G11B0011-105 [I,A]
	NCL	428/819.200; 428/900.000
	ECLA	G11B011/105M1; G11B011/105M2D4
JP 3492525	IPCI	G11B0011-105 [ICM,7]

AB A recording layer and a flux adjustment layer have different magnetic polarities so that their magnetizations are countervailed at room temp., with the result that a weakened leakage magnetic flux is released therefrom. A reproducing layer, a reproducing assist layer and an in-plane magnetization layer exhibit in-plane magnetization at room temp. In a 1st temp. area having a temp. not more than the crit. temp. of the reproducing layer, the reproducing layer 1 exhibits in-plane magnetization so that magnetization of a recording magnetic domain is not copied to the reproducing layer. In contrast, a 2nd temp. area having a temp. rise between the crit. temp. and the Curie temp. of the reproducing layer, the flux adjustment layer and the in-plane magnetization layer have reached their Curie temps. and lost their magnetization; thus, a leakage magnetic flux generated by the magnetization of the recording magnetic domain is copied to the reproducing assist layer that is in a perpendicular magnetization state, and further copied to the reproducing layer. Also, in a 3rd temp. area having a temp. rise exceeding the Curie temp. of the reproducing layer, the reproducing layer has lost its magnetization.

ST ferromagnetic film magnetooptical recording disk
IT Ferromagnetic films
(in magnetooptical recording medium with ***super*** ***resoln*** .)
IT Rare earth alloys
Transition metal alloys
RL: TEM (Technical or engineered material use); USES (Uses)

(in magnetooptical recording medium with ***super*** ***resoln***
.)
IT ***Sputtering***
(in prepn. of magnetooptical recording medium with ***super***
resoln .)
IT Magnetooptical recording materials
Optical ***disks***
(magnetooptical recording ***medium*** with ***super***
resoln .)
IT Thickness
(magnetooptical recording medium with ***super*** ***resoln*** .
in relation to)
IT Electronic device fabrication
(of magnetooptical recording medium with ***super*** ***resoln***
.)
IT 7429-90-5, ***Aluminum*** , uses 7440-21-3, ***Silicon*** , uses
7440-25-7, Tantalum, uses 7440-32-6, Titanium, uses 11099-22-2
11147-96-9 11148-71-3 12033-89-5, ***Silicon*** nitride, uses
12036-40-7, Tantalum sesquioxide 24304-00-5, ***Aluminum*** nitride
37239-25-1 56199-40-7 59762-78-6 60475-98-1, ***Aluminum***
silicon nitride 68824-66-8, Iron 77, terbium 23 (atomic)
75442-46-5, Iron 70, terbium 30 (atomic) 80954-87-6 87716-07-2
91810-08-1 91810-10-5 94270-61-8 94858-24-9 124174-91-0, Cobalt
10, iron 62, terbium 28 (atomic) 134085-05-5, Gadolinium, iron,
neodymium 174878-50-3 192646-44-9, ***Aluminum*** , gadolinium,
iron 199600-64-1 201155-68-2, Gadolinium, holmium, iron 204921-07-3
214483-61-1 290354-99-3, Cobalt 13.8, gadolinium 31, iron 55.2 (atomic)
290355-00-9, Cobalt 10.6, iron 66.4, terbium 23 (atomic) 290355-01-0,
Aluminum 25, gadolinium 8.25, iron 66.75 (atomic) 290355-02-1,
Aluminum 7, gadolinium 27.9, iron 65.1 (atomic) 290355-03-2,
Cobalt, dysprosium, gadolinium, iron, terbium 290355-04-3, Gadolinium,
iron, titanium 290355-05-4, Gadolinium, iron, vanadium 290355-06-5,
Gadolinium, iron, palladium 290355-07-6, ***Copper*** , gadolinium,
iron 290355-08-7, Gadolinium, iron, ***silicon*** 290355-09-8,
Cobalt, gadolinium, iron, yttrium 290355-10-1, Cobalt, gadolinium, iron,
titanium 290355-11-2, Cobalt, gadolinium, iron, vanadium 290355-12-3,
Cobalt, gadolinium, iron, palladium 290355-13-4, Cobalt, ***copper***
, iron, gadolinium 290355-14-5, Erbium, gadolinium, iron 290355-15-6,
Cobalt, gadolinium, holmium, iron 290355-16-7, Cobalt, gadolinium,
erbium, iron 290355-17-8, Cerium, gadolinium, iron 290355-18-9,
Gadolinium, iron, praseodymium 290355-19-0, Gadolinium, iron, samarium
290355-20-3, Cerium, cobalt, gadolinium, iron 290355-21-4, Cobalt,
gadolinium, iron, praseodymium 290355-22-5, Cobalt, gadolinium, iron,
samarium
RL: TEM (Technical or engineered material use); USES (Uses)
(in magnetooptical recording medium with ***super*** ***resoln***
.)
IT 7440-37-1, Argon, uses 7727-37-9, Nitrogen, uses
RL: NUU (Other use, unclassified); USES (Uses)
(in prepn. of magnetooptical recording medium with ***super***
resoln .)
IT 91651-04-6 94858-25-0
RL: TEM (Technical or engineered material use); USES (Uses)
(magnetooptical recording medium with ***super*** ***resoln***
.)
RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Anon; JP 1040600 1998
(2) Hirokane; US 5777953 1998
(3) Hirokane; US 5939187 1999 CAPLUS
(4) Hirokane, J; Japan Applied Magnetic Society Bulletin 1997, V21(8), P1076
CAPLUS
(5) Hirokane, J; Jpn J Appl Phys, Part 1 1996, V35(11), P5701 CAPLUS

L11 ANSWER 9 OF 13 CAPLUS
AN 2000:504060 CAPLUS
DN 133:244658
ED Entered STN: 26 Jul 2000
TI Surface-emitting lasers for optical ***near*** - ***field*** data
storage
AU Koyama, Fumio; Shinada, Satoshi; Goto, Kenya; Iga, Kenichi
CS Precision and Intelligence Lab., Tokyo Institute of Technology, Yokohama,

Japan
SO Proceedings of SPIE-The International Society for Optical Engineering (1999), 3899(Photonics Technology into the 21st Century: Semiconductors, Microstructures, and Nanostructures), 344-350
CODEN: PSISDG; ISSN: 0277-786X
PB SPIE-The International Society for Optical Engineering
DT Journal
LA English
CC 73-10 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 74, 76
AB One of the interesting applications of 2-dimensional VCSEL arrays is high d. optical data storage. The authors proposed a micro-metal aperture VCSEL for producing optical ***near*** - ***field*** . The evanescent wave emitted from a small metal aperture formed on a VCSEL surface is irradiated to an ***optical*** ***disk*** , such as a phase change ***optical*** ***disk*** . The authors carried out a ***near*** - ***field*** anal. on the radiation from the metal micro aperture loaded on a VCSEL by using 2-dimensional finite element method (FEM), showing a possibility of a spot size of <100 nm. The authors can recycle the reflected wave from the metal aperture, when the authors properly design the phase matching between the DBR mirror and the metal. The authors can expect an improvement in a power conversion efficiency of radiating ***near*** ***field*** light from the aperture by using a 'photon recycling' effect. An expected efficiency and power d. are discussed for 850 nm metal aperture VCSELs. The authors have fabricated micro-metal aperture VCSELs by using focus ion beam etching. The size of the fabricated apertures ranges from 100 nm and 400 nm. The authors have realized sub-mA low threshold metal aperture VCSELs. The power d. is .apprx.6 kW/cm2. The authors will be able to improve the power d. by reducing the oxide aperture in the cavity. The authors also discuss on another way to increase the efficiency and the power d., such as using a surface plasmon effect of a small metal tip formed on the surface. The authors will discuss a possibility of optical ***near*** - ***field*** recording by using the proposed metal aperture VCSEL.
ST surface emitting laser optical ***near*** ***field*** data storage
IT ***Sputtering***
Sputtering
(etching, ion-beam, in fabrication; surface-emitting lasers for optical ***near*** - ***field*** data storage)
IT Etching
Etching
(***sputter*** , ion-beam, in fabrication; surface-emitting lasers for optical ***near*** - ***field*** data storage)
IT ***Optical*** ***disks***
Optical recording
Semiconductor device fabrication
Semiconductor lasers
(surface-emitting ***lasers*** for optical ***near*** - ***field*** data storage)
IT 1303-00-0, Gallium arsenide, properties 37382-15-3, ***Aluminum*** gallium arsenide ((Al,Ga)As)
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(DBR; surface-emitting lasers for optical ***near*** - ***field*** data storage)
IT 7440-57-5, ***Gold*** , uses 22831-42-1, ***Aluminum*** arsenide
RL: DEV (Device component use); USES (Uses)
(surface-emitting lasers for optical ***near*** - ***field*** data storage)
IT 106070-10-4, ***Aluminum*** gallium arsenide al0.7ga0.3as
106312-09-8, ***Aluminum*** gallium arsenide al0.2ga0.8as
107121-46-0, ***Aluminum*** gallium arsenide al0.9ga0.1as
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(surface-emitting lasers for optical ***near*** - ***field*** data storage)
RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Betzig, E; Appl Phys Lett 1992, V61, P142 CAPLUS
(2) Fischer, U; Phys Rev Lett 1989, V62, P458 CAPLUS
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(11) Ukita, H; Appl Opt 1989, V28, P4360

L11 ANSWER 10 OF 13 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2000:177549 CAPLUS
DN 132:315744
ED Entered STN: 19 Mar 2000
TI A ***near*** - ***field*** recording and readout technology using a metallic probe in an ***optical*** ***disk***
AU Fuji, Hiroshi; Tominaga, Junji; Men, Liqiu; Nakano, Takashi; Katayama, Hiroyuki; Atoda, Nobufumi
CS Advanced Technology Research Laboratories, Sharp Corporation, Tenri, 632-8567, Japan
SO Japanese Journal of Applied Physics, Part 1: Regular Papers, Short Notes & Review Papers (2000), 39(2B), 980-981
CODEN: JAPNDE; ISSN: 0021-4922
PB Japanese Journal of Applied Physics
DT Journal
LA English
CC 74-12 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
AB The authors demonstrate a new ***near*** - ***field*** technol. that uses a metallic probe in an ***optical*** ***disk*** . The metallic probe is produced in a focused spot on a readout layer composed of ***silver*** oxide. However the metallic probe is not transparent to far- ***field*** light, ***near*** - ***field*** light generated around it. Therefore, a mark of less than 100 nm in length could be recorded and reproduced by detecting the scattered light around the metallic probe and the mark.
ST ***near*** ***field*** recording readout technol metallic probe ***optical*** ***disk***
IT ***Optical*** ***disks***
Refractive index
(***near*** - ***field*** recording and readout technol. using in situ produced ***Ag*** metallic probe in ***optical*** ***disk*** contg. AgOx layer)
IT Optical recording
(***near*** - ***field*** ; ***near*** - ***field*** recording and readout technol. using in situ produced ***Ag*** metallic probe in ***optical*** ***disk*** contg. AgOx layer)
IT 7440-22-4, ***Silver*** , processes
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(metallic probe; ***near*** - ***field*** recording and readout technol. using in situ produced ***Ag*** metallic probe in ***optical*** ***disk*** contg. AgOx layer)
IT 16150-49-5, Germanium antimony telluride(Ge2Sb2Te5)
RL: DEV (Device component use); USES (Uses)
(***near*** - ***field*** recording and readout technol. using in situ produced ***Ag*** metallic probe in ***optical*** ***disk*** contg. AgOx layer)
IT 7782-44-7, Oxygen, properties
RL: PRP (Properties)
(***near*** - ***field*** recording and readout technol. using in situ produced ***Ag*** metallic probe in ***optical*** ***disk*** contg. AgOx layer fabricated by reactive ***sputtering*** using)
IT 1314-98-3, Zinc sulfide, uses 7631-86-9, ***Silica*** , uses
RL: DEV (Device component use); USES (Uses)
(protective layer; ***near*** - ***field*** recording and readout technol. using in situ produced ***Ag*** metallic probe in ***optical*** ***disk*** contg. AgOx layer)
IT 20667-12-3, ***Silver*** oxide
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(read-out layer; ***near*** - ***field*** recording and readout technol. using in situ produced ***Ag*** metallic probe in

optical ***disk*** contg. AgOx layer)

IT 132913-92-9, Germanium 2, antimony 2, tellurium 5(atomic)
RL: DEV (Device component use); USES (Uses)
(recording layer; ***near*** - ***field*** recording and readout technol. using in situ produced ***Ag*** metallic probe in ***optical*** ***disk*** contg. AgOx layer)

RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE
(1) Awano, H; Appl Phys Lett 1996, V69, P4257 CAPLUS
(2) Kaneko, M; Jpn J Appl Phys 1992, V31, P568
(3) Schmidt, A; Thin Solid Films 1996, V281-282, P105 CAPLUS
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(7) Tominaga, J; Appl Phys Lett 1998, V73, P2078 CAPLUS
(8) Yasuda, K; Jpn J Appl Phys 1993, V32, P5210 CAPLUS
(9) Yoshimura, S; Jpn J Appl Phys 1992, V31, P576

L11 ANSWER 11 OF 13 CAPLUS

AN 1999:606924 CAPLUS
DN 131:222394
ED Entered STN: 24 Sep 1999
TI Magneto- ***optical*** recording ***medium*** and a recording method using such a medium
IN Hirokane, Junji; Murakami, Yoshiteru; Takahashi, Akira
PA Sharp Kabushiki Kaisha, Japan
SO U.S., 24 pp.
CODEN: USXXAM
DT Patent
LA English
IC ICM G11B005-66
INCL 428332000
CC 77-8 (Magnetic Phenomena)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5955191	A	19990921	US 1997-898270	19970722
	JP 3400251	B2	20030428	JP 1996-200014	19960730
PRAI	JP 1996-200014	A	19960730		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 5955191	ICM	G11B005-66
	INCL	428332000
	IPCI	G11B0005-66 [ICM,6]
	IPCR	G11B0011-00 [I,C]; G11B0011-105 [I,A]
	NCL	428/332.000; 360/059.000; 360/131.000; 365/122.000; 369/013.430; 369/014.000; 369/275.200; 369/275.300; 428/336.000; 428/819.400; 428/900.000
	ECLA	G11B011/105B2; G11B011/105M2D4
JP 3400251	IPCI	G11B0011-105 [ICM,7]

AB A ***super*** - ***resoln*** . magneto- ***optical*** recording ***medium*** has a reproducing layer, an in-plane magnetization layer and a recording layer. The reproducing layer and the recording layer are magnetostatically coupled, and each of the layers is made of a rare-earth transition-metal alloy which has a greater transition-metal sublattice moment than the compensation compn., and exhibits perpendicular magnetization, if it exists alone. At a temp. not more than the Curie temp., the in-plane magnetization layer is exchange-coupled with the reproducing layer so as to allow the reproducing layer to exhibit in-plane magnetization. Since the reproducing layer is allowed to exhibit in-plane magnetization by the in-plane magnetization layer, it is not necessary to use a material contg. a greater rare-earth metal sublattice moment as the reproducing layer. Therefore, at portions in the in-plane magnetization layer having temps. higher than the Curie temp., the directions of the transition-metal sublattice moments of the reproducing layer and the recording layer are aligned in parallel with each other. Thus, the reproducing polarity of this medium becomes the same as the polarity of a magneto- ***optical*** recording ***medium*** without a reproducing layer, thereby allowing compatibility with each other.

ST magnetooptical recording disk ***sputtering*** rare earth alloy
IT Magnetic disks

Magnetic disks
Optical ***disks***
Optical ***disks***
(magnetooptical ***disks*** ; magnetooptical recording medium and recording method using such medium)

IT Electronic device fabrication
Magnetooptical recording
Magnetooptical recording materials
Reactive ***sputtering***
Sputtering
(magnetooptical recording medium and recording method using such medium)

IT Rare earth alloys
Transition metal alloys
RL: TEM (Technical or engineered material use); USES (Uses)
(magnetooptical recording medium and recording method using such medium)

IT Films
(***sputter*** -deposited; magnetooptical recording medium and recording method using such medium)

IT 12033-89-5, ***Silicon*** nitride, processes 12727-34-3, ***Aluminum*** 27, iron 73 (atomic) 12780-16-4, ***Aluminum*** 25, iron 75 (atomic) 24304-00-5, ***Aluminum*** nitride 39309-74-5, Gadolinium 39, iron 61 (atomic) 53881-97-3, Cobalt 84, gadolinium 16 (atomic) 60475-98-1, ***Aluminum*** ***silicon*** nitride 82681-23-0, Gadolinium 20, iron 80 (atomic) 90538-38-8, Cobalt 32, gadolinium 20, iron 48 (atomic) 119675-75-1, Gadolinium 16, iron 84 (atomic) 141711-53-7, Gadolinium 10, iron 90 (atomic) 162856-00-0, Cobalt 20.2, dysprosium 28, iron 51.8 (atomic) 184766-56-1, Cobalt 4.1, gadolinium 18, iron 77.9 (atomic) 242490-10-4, Cobalt 13, gadolinium 20, iron 67 (atomic) 242490-11-5, ***Aluminum*** 25, gadolinium 7.5, iron 67.5 (atomic) 242490-12-6, Cobalt 21.6, dysprosium 23, iron 55.4 (atomic) 242490-13-7, Cobalt 14.4, gadolinium 10, iron 75.6 (atomic) 242490-14-8, Cobalt 14.1, gadolinium 12, iron 73.9 (atomic) 242490-15-9, Cobalt 13.8, gadolinium 14, iron 72.2 (atomic) 242490-16-0, Cobalt 13.4, gadolinium 16, iron 70.6 (atomic) 242490-17-1, Cobalt 13.1, gadolinium 18, iron 68.9 (atomic) 242490-18-2, Cobalt 12.8, gadolinium 20, iron 67.2 (atomic) 242490-19-3, Cobalt 12.5, gadolinium 22, iron 65.5 (atomic) 242490-20-6, Cobalt 12.2, gadolinium 24, iron 63.8 (atomic) 242490-21-7, Cobalt 11.8, gadolinium 26, iron 62.2 (atomic) 242490-22-8, Cobalt 11.5, gadolinium 28, iron 60.5 (atomic) 242490-23-9, Cobalt 36, gadolinium 20, iron 44 (atomic) 242490-24-0, Cobalt 20, gadolinium 20, iron 60 (atomic) 242490-25-1, ***Aluminum*** 25, gadolinium 3.75, iron 71.2 (atomic) 242490-26-2, ***Aluminum*** 25, gadolinium 10.5, iron 64.5 (atomic) 242490-27-3, ***Aluminum*** 25, gadolinium 13.5, iron 61.5 (atomic) 242490-28-4, ***Aluminum*** 25, gadolinium 18.8, iron 56.2 (atomic) 242490-29-5, ***Aluminum*** 25, gadolinium 21.8, iron 53.2 (atomic) 242490-30-8, ***Aluminum*** 25, gadolinium 24, iron 51 (atomic) 242490-31-9, ***Aluminum*** 25, gadolinium 30, iron 45 (atomic) 242490-32-0, ***Aluminum*** 25, gadolinium 52.5, iron 22.5 (atomic) 242490-33-1, ***Aluminum*** 25, gadolinium 67.5, iron 7.5 (atomic) 242490-34-2, ***Aluminum*** 25, gadolinium 75 (atomic) 242490-35-3, ***Aluminum*** 75, gadolinium 2.5, iron 22.5 (atomic) 242490-36-4, ***Aluminum*** 70, gadolinium 3, iron 27 (atomic) 242490-37-5, ***Aluminum*** 50, gadolinium 5, iron 45 (atomic) 242490-38-6, Gadolinium 7.5, iron 67.5, titanium 25 (atomic) 242490-39-7, Gadolinium 7.5, iron 67.5, tantalum 25 (atomic) 242490-40-0, Gadolinium 7.5, iron 67.5, ***platinum*** 25 (atomic) 242490-41-1, Gadolinium 7.5, ***gold*** 25, iron 67.5 (atomic) 242490-42-2, ***Copper*** 25, gadolinium 7.5, iron 67.5 (atomic) 242490-43-3, ***Aluminum*** 12.5, gadolinium 7.5, iron 67.5, titanium 12.5 (atomic) 242490-44-4, ***Aluminum*** 12.5, gadolinium 7.5, iron 67.5, tantalum 12.5 (atomic) 242490-45-5, Cobalt 23.5, dysprosium 16, iron 60.5 (atomic) 242490-46-6, Cobalt 23, dysprosium 18, iron 59 (atomic) 242490-47-7, Cobalt 20.7, dysprosium 26, iron 53.3 (atomic) 242490-48-8, Cobalt 38.5, dysprosium 23, iron 38.5 (atomic) 242490-49-9, Cobalt 46.2, dysprosium 23, iron 30.8 (atomic) 242490-50-2, Cobalt 62.4, dysprosium 23, iron 14.6 (atomic) 242490-51-3, Cobalt 69.3, dysprosium 23, iron 7.7 (atomic) 242490-52-4, Cobalt 73.2, dysprosium 23, iron 3.85 (atomic) 242490-53-5, Cobalt 4.5, gadolinium 10, iron 85.5 (atomic) 242490-54-6, Cobalt 4.4, gadolinium 12, iron 83.6 (atomic) 242490-55-7, Cobalt 4.3, gadolinium 14, iron 81.7 (atomic) 242490-56-8, Cobalt 4.2,

gadolinium 16, iron 79.8 (atomic) 242490-57-9, Cobalt 4, gadolinium 20, iron 76 (atomic) 242490-58-0, Cobalt 67.2, gadolinium 16, iron 16.8 (atomic) 242490-59-1, Cobalt 71.4, gadolinium 16, iron 12.6 (atomic) 242490-60-4, Cobalt 75.6, gadolinium 16, iron 8.4 (atomic) 242490-67-1, ***Aluminum*** 27, gadolinium 3.65, iron 69.4 (atomic) 242490-68-2, ***Aluminum*** 27, gadolinium 7.3, iron 65.7 (atomic) 242490-69-3, ***Aluminum*** 27, gadolinium 10.2, iron 62.8 (atomic) 242490-70-6, ***Aluminum*** 27, gadolinium 13.1, iron 59.9 (atomic) 242490-71-7, ***Aluminum*** 27, gadolinium 18.2, iron 54.8 (atomic) 242490-72-8, ***Aluminum*** 27, gadolinium 21.2, iron 51.8 (atomic) 242490-73-9, ***Aluminum*** 27, gadolinium 24.1, iron 48.9 (atomic) 242490-74-0, ***Aluminum*** 27, gadolinium 26.3, iron 46.7 (atomic) 242490-75-1, ***Aluminum*** 27, gadolinium 28.5, iron 44.5 (atomic) 242490-76-2, ***Aluminum*** 27, gadolinium 36.5, iron 36.5 (atomic) 242490-77-3, ***Aluminum*** 27, gadolinium 54.8, iron 18.2 (atomic) 242490-78-4, ***Aluminum*** 27, gadolinium 73 (atomic) 242490-79-5, ***Aluminum*** 72, gadolinium 10.9, iron 17.1 (atomic) 242490-80-8, ***Aluminum*** 65, gadolinium 13.6, iron 21.4 (atomic) 242490-81-9, ***Aluminum*** 47, gadolinium 20.7, iron 32.3 (atomic) 242490-82-0, ***Aluminum*** 5, gadolinium 37, iron 58 (atomic) 242798-55-6, ***Aluminum*** 5, gadolinium 15.2, iron 79.8 (atomic) 242798-56-7, ***Aluminum*** 10, gadolinium 14.4, iron 75.6 (atomic) 242798-57-8, ***Aluminum*** 15, gadolinium 13.6, iron 71.4 (atomic) 242798-58-9, ***Aluminum*** 20, gadolinium 12.8, iron 67.2 (atomic) 242798-59-0, ***Aluminum*** 25, gadolinium 12, iron 63 (atomic) 242798-60-3, Gadolinium 14.4, iron 75.6, titanium 10 (atomic) 242798-61-4, Gadolinium 14.4, iron 75.6, tantalum 10 (atomic) 242798-62-5, Gadolinium 14.4, iron 75.6, ***platinum*** 10 (atomic) 242798-63-6, Gadolinium 14.4, ***gold*** 10, iron 75.6 (atomic) 242798-64-7, ***Copper*** 10, gadolinium 14.4, iron 75.6 (atomic)

RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(magnetooptical recording medium and recording method using such medium)

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD

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(1) Anon; EP 0352548 1990
(2) Anon; EP 0596716 A2 1994
(3) Anon; EP 0604065 A2 1994
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(5) Anon; EP 0810594 A2 1997
(6) Nishimura, N; Journal of Applied Physics Part 02B 1996, V79(8), P5683 CAPLUS
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(8) Tamanoi, K; Journal of the Magnetic Society of Japan 1995, V19, P421

L11 ANSWER 12 OF 13 CAPLUS

AN 1997:119285 CAPLUS
DN 126:134427
ED Entered STN: 21 Feb 1997
TI Vacuum-metalizing apparatus for automated operation in coating of ***compact*** - ***disk*** substrates by ***sputtering***
IN Leblanc, Arthur R., III; MacMillan, Donald W.; Parent, Donald G.; Parent, Scott R.; Rossignol, Brian C.
PA First Light Technology, Inc., USA
SO PCT Int. Appl., 28 pp.
CODEN: PIXXD2
DT Patent
LA English
IC ICM C23C014-50
ICS C23C016-00; B05C013-00
CC 56-6 (Nonferrous Metals and Alloys)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9641899	A1	19961227	WO 1996-US8997	19960606
	W: JP				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 5709785	A	19980120	US 1996-658170	19960604
PRAI	US 1995-88P	P	19950608		
	US 1996-658170	A	19960604		

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CLASS
 PATENT NO.      CLASS  PATENT FAMILY CLASSIFICATION CODES
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 WO 9641899      ICM    C23C014-50
                 ICS    C23C016-00; B05C013-00
                 IPCI   C23C0014-50 [ICM,6]; C23C0016-00 [ICS,6]; B05C0013-00
                        [ICS,6]
                 IPCR   C23C0014-50 [I,A]; C23C0014-50 [I,C]; C23C0014-56
                        [I,A]; C23C0014-56 [I,C]
                 ECLA   C23C014/50B; C23C014/56D2
 US 5709785      IPCI   C23C0014-50 [ICM,6]; C23C0014-56 [ICS,6]; C23C0016-00
                        [ICS,6]
                 IPCR   C23C0014-50 [I,A]; C23C0014-50 [I,C]; C23C0014-56
                        [I,A]; C23C0014-56 [I,C]
                 NCL    204/298.250; 118/503.000; 118/719.000; 118/728.000;
                        118/729.000; 118/730.000; 204/298.150; 204/298.230;
                        204/298.260; 204/298.270; 204/298.280; 204/298.290
                 ECLA   C23C014/50B; C23C014/56D2
AB    The app. for vacuum metalizing includes holding fixtures suitable for
      automated loading of   ***compact***  -  ***disk***   substrates with the
      assocd. alignment,   ***masking***  , and sealing, followed by rapid
      coating.  The metal films (esp. Al and/or   ***Au***  ) are applied on the
      disks by   ***sputtering***  , followed by unloading of the disks.
ST    vacuum app automated metalizing   ***compact***    ***disk***  ;
        ***aluminum***    ***sputtering***    ***compact***    ***disk***
      vacuum app;   ***gold***    ***sputtering***    ***compact***
        ***disk***   vacuum app
IT    Computers
         (  ***compact***    ***disks***  ; vacuum metalizing app. for
         automated coating of   ***compact***    ***disks***   by
           ***sputtering***  )
IT    Process control
         (metalizing; vacuum metalizing app. for automated coating of
           ***compact***    ***disks***   by   ***sputtering***  )
IT      ***Sputtering***
         (vacuum metalizing app. for automated coating of   ***compact***
           ***disks***   by   ***sputtering***  )
IT    7429-90-5,   ***Aluminum***  , processes   7440-57-5,   ***Gold***  ,
      processes
      RL: PEP (Physical, engineering or chemical process); PROC (Process)
         (coating with; vacuum metalizing app. for automated coating of
           ***compact***    ***disks***   by   ***sputtering***  )

L11   ANSWER 13 OF 13  INSPEC  (C) 2006 IEE on STN
AN    2005:8512383  INSPEC    DN  A2005-18-4280T-005; B2005-09-4120-014
TI    Enhanced readout signal of   ***superresolution***    ***near***  -
        ***field***   structure disks by control of the size and distribution of
      metal nanoclusters
AU    Jenq-Nan Yih;  (Inst. of Opt. Sci., Nat. Central Univ., Chung-li,
      Taiwan), Wei-Chih Hsu; Song-Yeu Tsai; Shean-Jen Chen
SO    Applied Optics (20 May 2005), vol.44, no.15, p. 3001-5, 21 refs.
      CODEN: APOPAI, ISSN: 0003-6935
      SICI: 0003-6935(20050520)44:15L.3001:ERSS;1-Q
      Price: 0003-6935/05/153001-05$15.00/0
      Published by: Opt. Soc. America, USA
DT    Journal
TC    Practical; Experimental
CY    United States
LA    English
AB    We present a study in which we enhance the carrier-to-noise ratio of a
        ***superresolution***    ***near***  -  ***field***   structure (super-
        ***RENS***  ) disk to read below 100-nm marks by implementing a
        ***mask***   layer comprising a   ***Au***   nanocluster-embedded
        ***dielectric***   film. Various   ***Au***   nanocluster-embedded
        ***mask***   layers are fabricated by a radio-frequency cosputtering
      process, and the size and distribution of   ***Au***   nanoclusters are
      controlled. To verify the enhancement of the various films for super-
        ***RENS***   disk applications, the sensitivity enhancement of plasmonic
      gas sensing is demonstrated
CC    A4280T Optical storage and retrieval; A7865E Optical properties of metals
      and metallic alloys (thin films/low-dimensional structures); A6146
      Structure of solid clusters, nanoparticles, nanotubes and nanostructured
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       materials; A7755 Dielectric thin films; A7320M Collective excitations
       (surface states); A8280T Chemical sensors; B4120 Optical storage and
       retrieval; B7230L Chemical sensors; B7320T Chemical variables measurement
CT       ***dielectric***   thin films; gas sensors;   ***gold***  ;
         ***masks***  ; nanostructured materials;   ***optical***    ***disc***
       storage;   ***sputtering***  ; surface plasmons
ST     enhanced readout signal; superresolution near-field structure; near-field
       structure disks; size control; distribution control; metal nanoclusters;
       carrier-to-noise ratio; mask layer; Au nanocluster; dielectric film;
       radiofrequency cosputtering; sensitivity enhancement; plasmonic gas
       sensing; optical data storage; Au
CHI    Au el
ET     Au


=> d his

     (FILE 'HOME' ENTERED AT 16:35:09 ON 20 MAR 2006)

     FILE 'CAPLUS, INSPEC' ENTERED AT 16:35:18 ON 20 MAR 2006
L1         182532 S ((NEAR(3A)FIELD) OR MASK OR MASKING OR RENS OR SUPERRESOLUTIO
L2           1842 S ((GOLD OR AU OR AG OR SILVER OR PLATINUM OR PT OR CU OR COPPE
L3             61 S L2 AND ((OPTICAL OR LASER OR INFORMATION OR COMPACT)(3A)(DISK
L4           5945 S ((GOLD OR AU OR AG OR SILVER OR PLATINUM OR PT OR CU OR COPPE
L5           7716 S ((GOLD OR AU OR AG OR SILVER OR PLATINUM OR PT OR CU OR COPPE
L6            126 S L1 AND L5
L7              1 S L6 AND ((OPTICAL OR LASER OR INFORMATION OR COMPACT)(3A)(DIS
L8          37902 S ((GOLD OR AU OR AG OR SILVER OR PLATINUM OR PT OR CU OR COPPE
L9           1214 S L1 AND L8
L10            23 S L9 AND ((OPTICAL OR LASER OR INFORMATION OR COMPACT)(3A)(DIS
L11            13 S L10 NOT L3

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FULL ESTIMATED COST                                       411.31      411.52

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                                                           ENTRY     SESSION
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